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ORIGINAL COMMUNICATIONS.

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**A BONE FORCEPS FOR USE IN TYMPANIC SURGERY;
ITS VALUE IN SAFE-GUARDING THE FACIAL
NERVE IN THE RADICAL OPERATION FOR
CHRONIC SUPPURATIVE OTITIS
MEDIA.**

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That Chronic Suppurative Otitis-Media is in some degree a menace to life is a fact now generally conceded. In the treatment of this disease there is at least one point upon which most otologists agree, viz., that for a purulent discharge from the ear, which has persisted during a period of one or more years, and has resisted rational non-operative treatment persistently carried out for six months or more, surgical measures offer the only hope for a complete and permanent cure. This conclusion is a perfectly logical deduction from the surgical principle involved; for with the ear, as with other parts of the body, a persistent, purulent discharge, having its origin in or near a bony cavity, must be regarded as a sufficient evidence of the existence of carious bone.

The Radical Operation recognizes the fact that to eradicate with certainty all diseased structures, not only the tympanic cavity and ossicles, but also the mastoid antrum and in some cases the adjoining cells must be thoroughly exposed to view. It is probable that any further development in this line of surgery will be in the direction of improved technique, rather than the application of new theories.

Injury to the Facial Nerve. With an adequate knowledge of the surgical anatomy of the temporal bone, there is practically but one danger which the surgeon has to guard against in this operation, viz., *injury to the facial nerve*.

Post-operative facial paralysis is fortunately comparatively rare, and when it does occur, it is rarely permanent. Even a transient facial paralysis, however, is a condition which causes such distress and anxiety to the patient that its occurrence must be regarded as a surgical calamity.

Among recorded cases, several have from time to time been reported in which a paralysis has occurred in spite of the fact that



Fig. 1. Right temporal bone. Antrum exposed. Outer four-fifths of postero-superior canal wall removed. Black line above oval window marks position of facial canal (horizontal portion) as it passes beneath inner margin of meatus.

no injury to the nerve has been discovered at the time of the operation. Pressure upon the nerve by inflammatory exudates; excessive pressure by gauze packing in the post-operative dressing; congenital defects and fissures due to necrosis in the outer wall of the facial canal have been advanced as among the possible causes in such cases. Such hypotheses, while theoretically tenable, are by no means all convincing. In most cases, where facial paralysis follows an operation, either immediately or in the course of a few days, it would seem far simpler and more rational to assume that the nerve has been injured either directly or indirectly during the course of the operation. By direct violence we mean, of course, those injuries

which are produced by the edge of the chisel, either entering the canal, or momentarily compressing its wall so as to injure the nerve by pressure, or perhaps by a spicula of bone from its inner surface. By indirect violence we mean those morbid changes due to concussion.

In removing the posterior wall of the meatus by means of the mallet and chisel, the force of the blows is all in the direction of the inner tympanic wall. The inner margin of the postero superior wall forms part of the annulus tympanicus and directly overhangs the



Fig. 2. Right temporal bone. Postero-superior canal wall removed. *Black line* shows position of horizontal portion of facial canal. *Dotted line* marks course of bend and vertical portion of facial canal as it passes downward beneath ridge formed by lower half of posterior meatal wall.

facial ridge. Considerable care and some skill are therefore required in removing this delicate bridge of bone to insure against injury to the important structure beneath. (See Figure No. 1.) But even after this upper portion of the canal wall has been cut away, there is still to be removed a prominent ridge of bone formed by the lower half of the posterior wall of the meatus. This bony ridge lies directly over the descending, or vertical, portion of the facial canal. (See Figure No. 2.) Is it reasonable to assume that in reducing this ridge with mallet and chisel, no risk is incurred of injury to the nerve by concussion?

Whatever view may be held as to the commonest factor in its production, it is not improbable that with a further development of operative methods and technique, post-operative facial paralysis will come more and more to be regarded as a preventable surgical mishap.

In consideration of the above facts it occurred to the writer that if an instrument could be devised which would attack the bone from its inner, or tympanic, end—cutting from within outward—and at the same time combine sufficient strength and resistance to cut the outer and thicker portion of the canal wall, and where necessary the mastoid cortex, it might afford a comparatively safe and easy method



Fig. 3. Left temporal bone. Roof and posterior wall of meatus removed. Showing oval and round windows, and prominence of facial and external semicircular canals.

of reaching the seat of the disease. The cutting forceps to be described have proved so useful to the writer that he is led to hope that they may be also of some value to others.

The Instruments. The accompanying illustrations will give a better idea of the forceps devised by the writer than any description he might write. They should be in three sizes, the smallest of which (No. 1) is necessary in the preliminary step of removing the inner margin of the roof of the meatus. In using the larger instruments of the set, and particularly in cutting very hard bone, the distal cutting edge should be made to do most of the work, the upper blade serving chiefly to engage the bone. This can be regulated by

slightly rotating the forceps forward as the handles are brought together. If it be rotated backward instead of forward, a strain will be placed upon the mechanism holding the blades in apposition under which the steel at this point is likely to give way. If the surgeon forgets to clear the instrument after each removal of bone, it is apt to be broken by particles of bone becoming wedged between the blades.

A word should also be said as to the force which may be employed in approximating the handles. In the construction of these instruments the leverage is so proportioned as to furnish power which rather severely taxes the strength of the steel. If, therefore, in cutting a hard bone, the handles are suddenly approximated with full hand strength, something will have to give and this in some cases will be the instrument. If on the other hand the handles are gradually approximated and at the same time slightly rotated forward as the bone is felt to offer resistance, the accident described is not likely to occur.

The Technique. The term "*Radical Operation*" no longer refers to any particular method, and is used to describe any surgical attempt to convert the tympanic cavity and mastoid antrum into one large cavity of healthy bone, draining easily by way of the external auditory meatus.

The operation as usually performed, has been so frequently and adequately described in text books and journals as to call for no repetition here. It is the writer's purpose to describe in detail only that part of the operation which is modified by the use of his instruments.

The patient is prepared for operation, and the mastoid cortex exposed in the usual way. The anterior flap and the auricle are pushed forward so as to expose the spine of Henle and entrance to the bony meatus, and the skin and periosteal lining separated from its posterior wall, roof and floor from the entrance of the canal to its termination at the annulus tympanicus. The auricle is drawn forward by some form of retractor, preferably a strip of sterile gauze passed through the membranous canal.

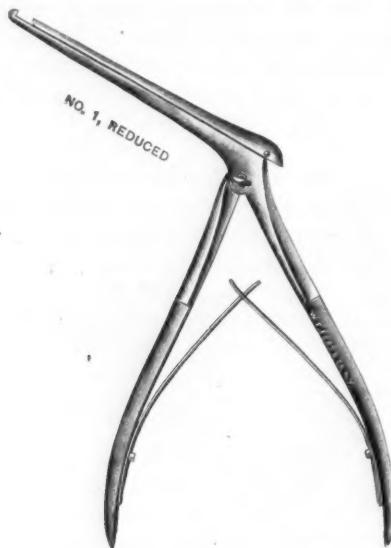
From this point it will be necessary to work by reflected light, or by direct illumination by means of an electric forehead lamp.

Before proceeding further, the fundus of the canal should be inspected. The remains of the drum-membrane should be removed, and if either malleus or incus be within view, an attempt should be made to remove it. If neither malleus or incus be visible, the end of a small tympanic probe, bent near the tip so as to describe a right

angle should be introduced into the tympanum and carried upward into the vault. Should the tip of the probe encounter one of the ossicles blocking the entrance to the vault, it should be pushed backward or forward out of the way, and no attempt should now be made to remove it. We are now prepared for the first step of the bone operation.

In using these forceps the writer has found it easier to remove first the roof and posterior wall of the meatus, the mastoid cortex covering the antrum being removed later.

The small forceps (No. 1), with cutting edges separated and pointing upward, is introduced into the tympanum and carried up-



ward into the vault. On attempting to withdraw it, the distal cutting edge will be engaged by the inner margin of the roof of the meatus. The handles are now gradually approximated when the blades will be felt to crush, or cut through the bone, and may be withdrawn, bringing away a small portion of the upper canal wall. Having cleared the instrument of bone, it is again introduced into the canal and made to engage the roof in the notch made by the first bite of the forceps. By a repetition of this process the roof of the meatus is quickly removed. The vault is now exposed to view and a bent probe may be passed backward into the antrum.

The next step will be the removal of the posterior canal wall. For this purpose the small forceps (No. 1), or the next larger if it will enter the tympanum, is employed. It is introduced into the canal as before described except that its cutting edges are now directed backward toward the antrum. The handles are carried slightly forward in order to bring the cutting edges in contact with the inner margin of the posterior canal wall, which is rapidly removed as far outward as the spine of Henle.

The work just described—i.e., the removal of the superior and posterior canal walls—can be done quite rapidly, usually requiring

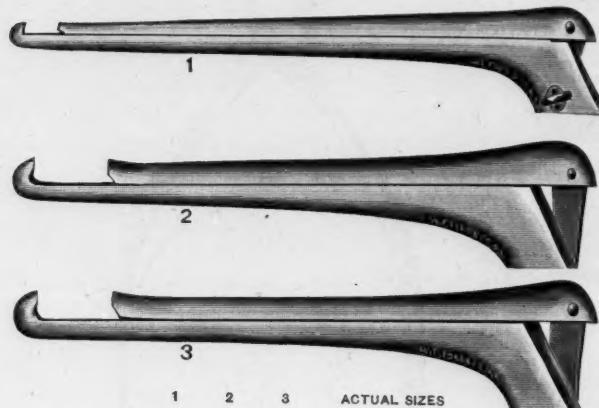


not more than five to eight minutes. Should hemorrhage obscure the view at this stage, the tympanum should be packed with a strip of sterile gauze soaked in a solution of adrenalin chloride, 1 to 1000. This may be removed in one or two minutes when the operative field will usually be found bloodless. The tympanic space and landmarks, including the oval window, horizontal portion of the facial ridge and prominence of the external semi-circular canal, are now well exposed to view (See Figure No. 3), and are kept under observation during the remainder of the operation.

Beginning at the spine of Henle the mastoid cortex covering the antrum is now removed with the larger of these forceps, with one

of the older ronguers, or with mallet and chisel as the surgeon may prefer,—thus mapping out roughly the antro-tympanic cavity which is the mechanical result proposed by the operation. Having the surgical landmarks all clearly exposed, the surgeon may now proceed to those minutiae of the operation upon which a successful result ultimately depends.

The remaining steps of the operation, i.e., the removal of all diseased bone; the removal of the bony ridge formed by the lower part of the posterior canal wall; the removal of the ridge of the hypotympanic recess and the thorough curettement of the region of the osteum tubae; and finally the reduction of the walls of the bone cavity as nearly as possible to smooth surfaces have been fully



scribed elsewhere and will be accomplished by each surgeon by means of such instruments as have seemed most efficient in his hands. Personally, the writer has found the rongeur a practical substitute for the chisel in tympanic surgery. With appropriate rongeurs and tympanic bone curettes even the ridge formed by the lower half of the posterior canal wall may be readily removed, and with little danger of exposing the descending portion of the facial nerve than none of injuring it by concussion.

The writer makes no pretense of having described a new operation. This paper is simply a report of a modification of the usual procedure which has seemed to add somewhat to the safety of

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operation. Whether this modification is in any sense an improvement on the older method is a question which each operator will decide for himself. In the experience of the writer it has seemed to possess the following advantages:

1. Considerable saving of time in removing the roof and posterior wall of the meatus and exposing the antrum.
2. Exclusion of the chisel from the tympanic part of the operation, and elimination of the danger which is always present in removing with this instrument that inner margin of the posterior-superior canal wall which overhangs the facial ridge.
3. Exclusion of the mallet from the tympanic operation and elimination of the danger of injury to the nerve by concussion.
4. Diminished danger to important structures from the fact that the bone is cut in a direction from within outward, i.e., away from the stapes, facial canal and external semi-circular canal.
5. Increased safety to important structures from the fact that after the preliminary steps of removing the superior and posterior walls of the meatus, the tympanic landmarks are constantly in sight.

N. B.—Since showing these instruments before the Otological Section of the New York Academy of Medicine, and since this paper was written, the writer has come upon references to two instruments of somewhat similar construction. One of these, made by Reiner of Vienna, is shown on page 446 of the recent edition (1903) of Politzer's text book. A cut of the other, which is spoken of as Krause's Osteotome, will be found on page 182 of Lake's recently published Handbod of Diseases of the Ear. Both of these instruments present differences rendering them unavailable for the heavier work for which the writer's forceps were designed. The first set of the latter was made by Mr. Ford, a little over a year ago.

58 West 56th Street.

THE QUESTION OF INTRA-NASAL OPERATION UPON THE FRONTAL SINUS.*

BY BEAMAN DOUGLASS, M.D., NEW YORK.

The advantages of drainage through the nose in cases of disease of the frontal sinus are, with the exception of the possibility of re-infection, so superior to the advantages gained by an external operation, that if a safe way could be devised by which the drainage in disease of the frontal sinus would follow its natural channel, we would have an immense improvement over our present method of operation. At the present time, the frontal sinus is approached by operations of greater or lesser magnitude, done through its anterior wall. This necessitates an incision through the skin, the cutting away of more or less of the bony wall, with the sure, subsequent disadvantage of a scar, and the possible, subsequent disadvantage of the formation of a depression as a result of the removal of the bony substance. The inconvenience of wearing a bandage, the disability to which the patient is subjected, and the tediousness of healing, are all elements which make the operation through the anterior wall a disadvantageous one. On the other hand, we know that a large percentage of frontal sinus cases recover spontaneously, and that external frontal sinus operations are comparatively infrequent. We also remember that the frontal sinus is unlike the other accessory sinuses of the nose, because its drainage opening is located at the very best possible position for perfect drainage. If one looks from above upon the floor of the frontal sinus, it is very much like looking down into a funnel. The whole of the floor inclines more or less abruptly towards the nasal frontal duct, in such a way as to facilitate drainage from the sinus. We all know that many cases of frontal sinus disease are cured by simply removing the obstructing element from the drainage opening. Sometimes this obstructing element is the swollen external wall of the middle turbinate; sometimes it is the swollen tissue of the hiatus semilunaris, or of the adjacent processus uncinatus or bulla ethmoidalis; sometimes it is small polyp developed in this region. But whatever the cause, the frontal sinus responds nicely to treatment if it has free drainage, and if we have access to it, so that it may be irrigated.

* Read before the New York Academy of Medicine, Section on Laryngology and Rhinology, March 28, 1904.

The distance from the floor of the frontal sinus through the nasal frontal duct is scarcely more than $\frac{1}{4}$ or $\frac{3}{8}$ of an inch; the distance from the end of the nasal frontal duct to the lower end of the bulla ethmoidalis (which marks the lower limit of possible obstruction of frontal sinus drainage) is not more than $\frac{3}{4}$ of an inch. Most of this region can easily be seen if the end of the middle turbinate has been removed. There remains a region of about $\frac{1}{2}$ inch, which includes the upper part of the hiatus semilunaris and the region of the nasal frontal duct, which is outside the range of vision. If it were possible to operate upon this region in such a way as to enlarge the opening into the frontal sinus sufficiently to secure thorough drainage and subsequent entrance with instruments, it would be possible for us to advocate an intra-nasal operation; and the object of my paper is to investigate the anatomical relations of this region, for the purpose of ascertaining if such a plan is justifiable. In considering these anatomical facts there are five points to which I would particularly ask your attention:

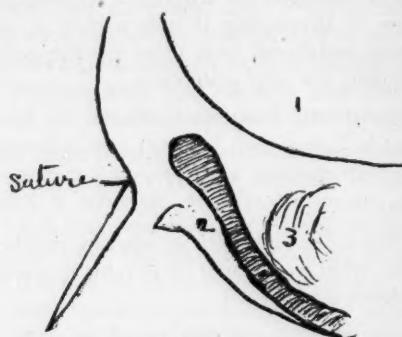
- (1.) That the frontal sinus may be absent.
- (2.) That the posterior wall of the frontal sinus, which supports the anterior lobe of the brain, may vary greatly in its height from the nasal frontal duct.
- (3.) That one is often mistaken in believing that he has entered the frontal sinus, when, as a matter of fact, his instrument is within an enlarged anterior ethmoid cell.
- (4.) That the direction and position of the nasal frontal duct varies considerably.
- (5.) That the olfactory fissure is an element of danger, in doing an intra-nasal operation.

(1.) THE ABSENCE OF THE FRONTAL SINUS.

No sinus gives such evidence of variation as the frontal sinus; it is not present until between the third and fifth years, and its development is probably interfered with by the early diseases of childhood or anything that produces mal-nutrition on the part of the child; it develops as a bud; which is shoved up from the nose into the region of the frontal bone, just behind that part of the frontal bone which articulates with the nasal bone and with the nasal process of the superior maxillary bone. The sketch from an actual case will illustrate the method of development of the frontal and the way the frontal sinus appears if it fails to develop. (Show dia-

gram: specimen 14, skull 95.) In this case the frontal sinus is absent; the hiatus semilunaris ends in the blind pouch, but this pouch extends behind the nasal frontal superior maxillary suture, two millimeters above their point of junction. This undeveloped frontal sinus is eight millimeters from the anterior surface of the frontal bone; the width of the pouch is four millimeters.

The naso-fronto superior maxillary suture spoken of above is the point upon the skull where the frontal bone joins with the nasal bone internally and the nasal process with the superior maxillary externally. This makes a "T" shaped suture, which can sometimes be felt, and is always easily demonstrated. It is a sure guide to the level of the floor of the frontal sinus and marks the course of the



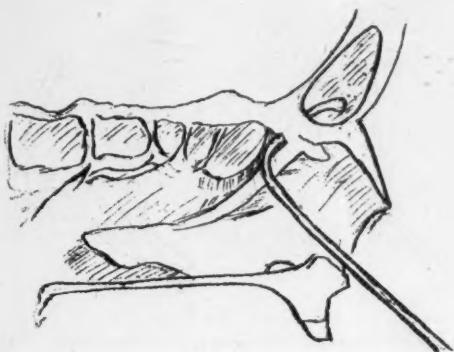
Cut No. 1

Diagram of skull 95. Shaded part is the Hiatus Semilunaris and undeveloped frontal sinus. 1. Anterior cerebral fossa. 2. Processus Uncinatus. 3. Bulla Ethmoidalis.

nasal frontal duct. This important landmark should not be forgotten in case of abnormalities in frontal sinus work. Sometimes, as I have said, the frontal sinus does not develop. In such cases an operator attempting to enlarge the opening into the frontal sinus from the nose, would meet with difficulty and possibly run into danger, because he would not be able to find the sinus. But this danger would not be greater in the intra-nasal operation than in the operation done from the outside. In other cases, the frontal sinus is very small, and in such cases the operator attempting to curette the sinus or enlarge the opening sufficiently for satisfactory drainage might do injury to the brain through the region which will be mentioned later on.

(2.) A LOW POSTERIOR WALL, OR LOW ROOF, OF THE FRONTAL SINUS:

When the naso-frontal duct has been opened and the cutting instruments continue to be used, the point which is next attacked by the instrument is *not* the anterior wall, but the *posterior* wall of the frontal sinus. This is explained by a view of cut 2, which shows that the bent probe passed into the frontal sinus takes a direction towards its anterior wall, but that a straight instrument which has been cutting away the region of the nasal frontal duct next attacks the posterior wall, which is the support for the brain. This roof, or posterior wall, of the frontal sinus supports the anterior lobe of the brain. It begins above, where it meets the anterior wall of the sinus, and extends concavely back-



Cut No. 2

Diagram of bent probe in Frontal Sinus. A straight cutting instrument would approach the brain wall rather than move away from it.

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ward to the posterior limit of the frontal sinus. It thus forms both the posterior wall and the roof. In some cases, this posterior wall is scarcely concave; in other cases, it is markedly concave. So far as I know there is no rule by which the concavity of this wall may be determined by external examination. If the sinus is large and the posterior wall not markedly concave, the perpendicular distance between this wall and the nasal frontal duct is considerable. But if the sinus is small, or if the posterior wall dips into the sinus considerably, the distance from the nasal frontal duct to the posterior wall is very short. In a series of two hundred skulls which I measured, to ascertain the average distance between the nasal frontal duct and a point perpendicularly opposite on the posterior

wall, I found that the distance varied from four to forty millimeters—that is, from 1-6 to 1½ inches. With this vast difference of distance between the nasal frontal duct and the wall which supports the brain directly opposite it, it will readily be perceived that in some cases an intra-nasal operation could be done with perfect safety, but in other cases any operation done intra-nasally might result in the perforation of the posterior wall and subsequent involvement of the brain. Some interesting measurements are given in a table which is here appended, showing the relative distance in millimeters of points which have a bearing upon the surgical topography of the frontal sinus.



Cut No. 3

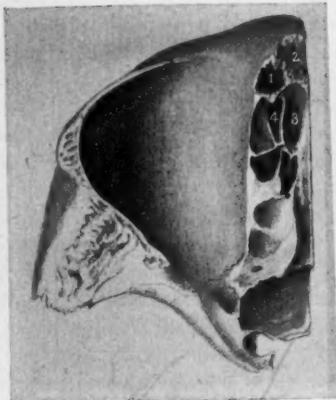
Longitudinal section of Ethmoid Cell invading the space of Frontal Sinus. 1. Ethmoid Cell developed in Frontal Sinus space. 2. Frontal Sinus. The arrow is in the naso-frontal duct.

(3.) MISTAKING AN ANTERIOR ETHMOIDAL CELL FOR THE SINUS:

If the frontal sinus is absent, an anterior ethmoidal cell often attempts to compensate for the absence of the sinus by an unusually extensive development forward and upwards. Sometimes an anterior ethmoid cell will enter the region of the frontal bone and will simulate a small frontal sinus. The nasal measurements with the probe will be about the same, and the skiagraph alone can distinguish the fact that the probe does not lie against the anterior wall of the frontal bone. Sometimes, when the frontal sinus is small, a similar over-development of one of the anterior ethmoid cells occurs. In such cases, this ethmoid cell extends upward, along the side of the nasal frontal duct and spreads out within the frontal bone, externally to the naso-frontal duct (Cut 3). In a few cases I

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have found that the ethmoid cell may extend upward to the inner or median side of the nasal frontal duct. The importance of this observation is at once apparent, for if an intra-nasal operation is attempted and the instrument is allowed to work within the enlarged ethmoid cell under the belief that it is in the frontal sinus, a perforation of the brain plate would easily result, even though the instrument were working in a small frontal sinus. This, of course, is easy to understand, from the fact that the roof of all the ethmoid



Cut No. 4. (Viewed from below.)

1. Articulation of superior maxillary bone.
2. Articulation of nasal bone.
3. Olfactory fissure.
4. Naso-frontal duct.



Cut No. 5. (Viewed from above.)

1. Projection for support of nasal bone.
3. Olfactory fissure.
4. Naso-frontal duct.

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cells is always much lower than the roof of the frontal sinus; because, in a normal case the level of the roof of the ethmoid is about the level of the floor of the frontal sinus. The danger of intra-nasal work is therefore one of danger of perforation of the brain; and from what has already been said, it can also be safely assumed that even if we have been in the habit of washing out a cavity with an irrigating syringe repeatedly, it would not be safe for us to use a cutting instrument within the same region. But this is more clearly emphasized when we study the next point; viz.:

	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10	No. 11	No. 12	No. 13	No. 14	No. 15	No. 16	No. 17	No. 18	No. 19	No. 20	No. 21	No. 22	No. 23	No. 24	No. 25	
The anterior attachment of the middle turbinate to the outer nasal wall is....., m. m. from the posterior edge of the processus uncinatus.....	12	11	6	10	6	12	10	15	10	10	11	10	10	7	6	10	8	6	9	4	5	4	4	4	4	2
Distance from external surface of bone to nasal frontal duct at the level of frontal nipple or ridge, in m. m.	10	7	4	R	R	8	7	6	9	5	5	6	7	8	7	4	4	6	10	7	10	8	6	5	5	5
The anterior ethmoid cell projects into the sinus, partially dividing it.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Distance of the posterior wall of the frontal sinus on a line perpendicular with the nasal frontal duct, is m. m.	2	10	13	25	7	12	5	10	24	12	17	6	10	10	9	12	7	9	10	5	10	13	14	14	15	11
The olfactory fissure forms a part of the floor of the sinus.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Floor of the frontal sinus, in m. m., above or below the level of the naso-fronto-superior maxillary suture,.....	L	L	-1	-1	+1/2	+1	L	-1/2	L	+1 1/2	-1	+1/2	-1/2	.....	+1/2	+1/2	L	+1	-7	+2	L	L	L	+1	-1/2	.....
Distance of the nasal frontal duct from the external surface of the bone, in m. m.	9	9	10	5	5	8	8	8	11	9	7	10	13	13	13	10	8	9	10	10	14	9	12	10	8	8
Opening of the frontal sinus in relation to the processus uncinatus.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nasal frontal duct opens median to anterior ethmoid cell, which forms a part of the floor of the frontal sinus,.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Yes																
Nasal frontal duct opens external to anterior ethmoid cell, which forms a part of the floor of the sinus,.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nasal frontal duct begins behind nasal process of superior maxillary bone,.....	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

R—Ridge. L—Level. E—S—Ex or Sup.

(4.) THE RELATION OF THE NASO-FRONTAL DUCT TO THE OLFAC-
TORY FISSURE.

A glance at the boundaries of the nasal frontal duct is now necessary for a thorough understanding of this point. The diagrams Cuts 4 and 5) show the relations of the nasal frontal duct throughout, from above. The first one shows that the nasal frontal duct is directly behind the suture made by the frontal bone, the nasal process of the superior maxillary bone and the nasal bone; or, to speak more exactly, the nasal frontal duct itself is immediately behind the nasal process of the superior maxillary bone. The distance from this process to the nasal frontal duct is generally about eight millimeters. This duct, then, is bounded in front by the nasal process of the superior maxillary bone; it is bounded on its orbital side by a part of one of the anterior ethmoid cells; it is bounded behind by an anterior ethmoid cell; and on its median side by the olfactory fissure, from which it is separated only by a thin plate of bone scarcely a millimeter in thickness. This olfactory fissure is composed of two sulci—an anterior one, which serves for the passage of the nasal nerve and artery, and the posterior one for the passage of the olfactory nerve. This olfactory fissure is a communicating foramen between the brain and the nose. It is separated from the nasal frontal duct, which lies external to its anterior part, as I have said before, by the very thinnest possible bone plate, scarcely a millimeter in thickness. If the continuation of this bone is examined it will be found that this plate of bone between the naso-frontal duct and the olfactory fissure is the processus uncinatus, which plays such an important part in the anatomy of the middle meatus. It does not require a mental prodigy to see that the operator in working in the upper region of the nasal frontal duct, just at the floor of the frontal sinus, is in constant danger of destroying the inner wall of the nasal frontal duct, by cutting away the extreme base of the processus uncinatus, and that the moment this is done, the operator has entered the olfactory fissure and is on a direct line of communication with the brain cavity, and in danger of producing a traumatism of the brain or septic meningitis.

(5.) I have now stated four reasons why the intra-nasal operation is practically impossible and, under certain conditions, entirely unsafe.

The fifth reason why it should not be done is on account of certain variations in the locality and direction of the nasal frontal duct. Specimens have been seen (see cuts) where the nasal frontal duct instead of opening at the anterior end of the hiatus semilunaris, as it ordinarily does, opens at the point posterior to this. Indeed, in some

cases, the nasal frontal duct opens into the nose on a line with the opening of the bulla ethmoidalis. This is considerably behind the usual opening of the duct—(four or five millimeters) 1-5 of an inch. When the duct opens more posteriorly than usual, its obliqueness is more marked and the danger of working upward is increased, the obliqueness of the duct bringing the brain wall nearer the nose. It has also been observed that in young frontal sinuses the duct is more oblique than in fully developed skulls. This is a matter of importance, as it increases the danger of operating upon young adults.

These five reasons are sufficient to show some of the difficulties and dangers which may be encountered in intra-nasal operation. The two greatest dangers are the second and fourth, viz: the low roof of the frontal sinus, which brings the brain plate very near the nasal frontal duct, and a slight deviation of the instrument towards the median line, which will bring this instrument into the region of the olfactory fissure and will allow an instant perforation. In cadaver work, where I have repeatedly attempted to perform a safe intra-nasal operation, it has invariably been one of these two conditions which has caused a perforation of the brain plate. I do not wish you to understand that I believe for an instant that no case of frontal sinus disease may be treated by intra-nasal operation—since we all know cases which have been brilliantly handled in this way. My own clinical experience and my experience with work on the cadaver, in searching for a safe intra-nasal operation, have shown me that the result of intra-nasal surgery on the frontal sinus is often brilliant; but on the other hand, perforation of the brain has occurred under most careful operative procedure, in cases where it was beyond my control to prevent it, although the percentage of these perforations was not larger than one-third. Still, if this number of perforations were carried into clinical experience, with the almost invariably fatal results, it would hardly justify our ever doing any frontal sinus operations intra-nasally.

By this time, you have undoubtedly received the impression that I consider all attempts to operate on the frontal sinus from the nose as unjustifiable and dangerous, notwithstanding the brilliant results which we sometimes see in our own work and that of our colleagues; and yet, it is hardly the province of the critic to tear down a structure without offering something as a substitute for the parts which he has demolished; and nothing is to be gained by condemnation unless another and better structure is to rise in its place. The question before us now is, whether it is not possible to devise some means of operation upon the frontal sinus in a safe way without producing

as much scar or deformity as one ordinarily produces from an external operation. In trying to build up a new structure in place of that which I have destroyed, I must acknowledge that my experience in this matter and with the technique which I am to propose, has been derived entirely from the theoretical study of anatomy and the operative work on the cadaver. As yet, I have not had an opportunity to apply this knowledge or the results of my cadaver experience, on the living subject, but it seems to me justifiable to propose what I have, hoping that someone else may have had a larger opportunity to develop the practical side of the suggestion than I have.

The problem is to reach the floor of the frontal sinus, which lies away from the brain, in a safe way, and yet in a way which will destroy the anterior part of the floor of the sinus without reaching the dangerous posterior wall. In other words, while all the attempts heretofore have been to enlarge the opening of the frontal sinus by cutting out the posterior wall of the nasal frontal duct, and with it the associated ethmoid cell, the question now is how to reach and destroy the anterior edge of the processus uncinatus, the anterior wall of the nasal frontal duct and that nipple or ridge of bone which projects from the anterior wall of the frontal sinus, making a part of the frontal sinus floor and receiving the base of the nasal bone on its articulating surface. (See cut 5.)

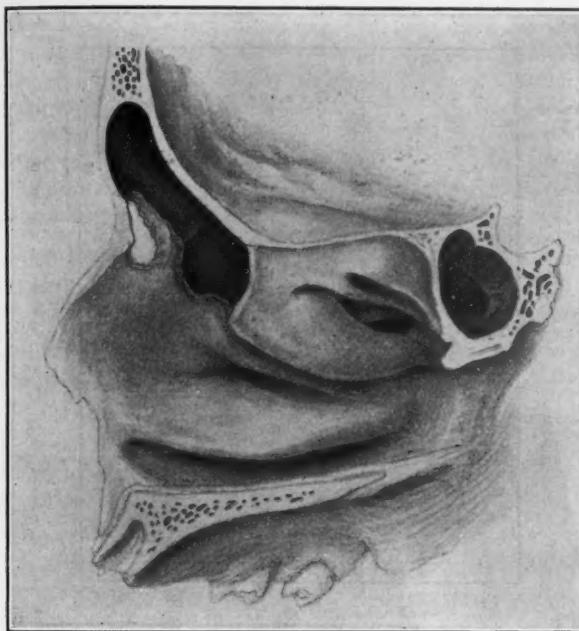
If we introduce a cutting instrument with the idea of opening the floor of the frontal sinus and place this cutting instrument against the junction of the middle turbinated body with the outer nasal wall, and then cut upward and slightly outward, we will not destroy any part of the frontal sinus, but will cut into the lachrymal duct, the upper end of which lies against the attachment of the middle turbinated body to the external nasal wall. (See cut.) If the cutting instrument is carried two millimeters (2-5 of an inch) further posteriorly, so as to lie external to the middle turbinated body, it will reach the hiatus semilunaris, and by cutting slightly forward will remove the posterior edge of the processus uncinatus. The processus uncinatus is ordinarily five millimeters wide, so that by cutting 1-5 of an inch anterior the whole width of the processus may be removed. If the instrument is now turned slightly upwards, forwards, and very slightly inward, it will lie in such a position that it will grasp the base of the processus uncinatus, which, I have shown before in Cut 4, lies just internal to the nasal frontal duct and external to the olfactory fissure. The safety of the next bite of the forceps depends now on whether the forceps cut out or inwards, for if they are inclined inward, they will enter the olfactory fissure;

if outward, they will destroy the nasal frontal duct and the ethmoid cell and enter the frontal sinus through its floor. If, instead of directing the instrument in this way, it is directed from the base of the processus uncinatus, slightly inward, it will cut through the processus uncinatus and continue up its median surface to the olfactory groove and through to the brain. It is of decided advantage to have the middle turbinate unamputated, for by keeping well external to the middle turbinate, the danger of opening the olfactory fissure is diminished.

If now we approach the study of the anterior part of the floor of the frontal sinus, it will be seen that the solid, bony projection, which I have before called a nipple or ridge of bone forms a large part of the floor of the frontal sinus in front, near its median line. This bony ridge or nipple is a part of the frontal bone and lies directly behind the nasal frontal superior maxillary articulation (See cut 5), and serves not only to support the nasal bone and the nasal process of the superior maxillary, but on its frontal sinus side, when all parts are normal, there is a kind of fusion at this point of the base of the processus uncinatus and the nasal attachment of the middle turbinate. This ridge is of considerable width, and occupies the floor of the frontal sinus from 4 or 7 or 12 millimeters in width. It can thus readily be seen that if this bony process could be destroyed a considerable space for drainage could be gained by the destruction of such a part of the floor; and it could all be accomplished without coming in contact anywhere with the posterior wall of the sinus. (See cut 5.) That is, an opening of 4 to 7 millimeters could be gained. Another point in favor of the destruction of this part is, that if it is attempted from the nose the direction of all the instruments would require an angle anterior of about 45 degrees; and this would bring the instruments directly away from the posterior wall. It is also possible, if it is found necessary, to use a chisel to remove this part, introducing a protector within the nasal frontal duct which would prevent wounding the posterior wall. In order to remove this part (it is necessary for us to use cutting instruments, working at an angle forward of about 45 degrees, and externally at an obliqueness of about 5 degrees from the perpendicular. This corresponds roughly to the angle made between the base of the nasal bone and the frontal bone. This external angle forms a rough and ready means of determining the direction of the instruments when used internally.

I have satisfied myself, after many cadaver operations, that this is a fairly safe operation to do, but occasionally, I have had a perforation of the brain result from *this* operation.

There is, however, another way to destroy this part, which can be done with absolute safety and with surgical precision: That is, to destroy this nipple or ridge of bone on the floor of the frontal sinus through an external incision, which need not produce a marked scar and which may be closed up immediately after operation. This operation is performed in the following way:

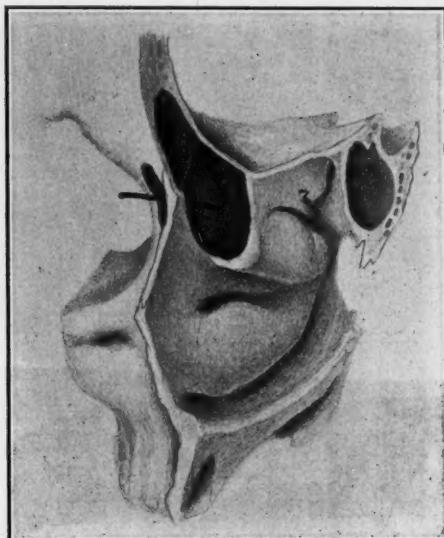


Cut No. 6

Frontal Sinus and Ethmoid operation. Lateral view showing destruction of floor of frontal sinus.

An incision is made $1\frac{1}{2}$ cm. long, part way between the inner canthus of the eye and the medial line of the nose. This incision should extend an equal distance each side of the line from the inner canthus. A periosteotome should be used to separate the soft parts from the bone and the suture between the form by the frontal bone, the nasal bone and the nasal processus of the superior maxillary

bone should be found. This naso fronto superior maxillary suture, as we have already said, is "T" shaped. It is always easily demonstrated and when found is a guide to our opening. A small trephine or chisel is now used to make an incision through the bone, the center of the incision being the center of this suture. The trephine has perforated through the base of the nasal bone, a bit of the nasal process of the superior maxillary, and this part or ridge of the frontal bone which supports these two structures.



Cut No. 7

Frontal Sinus and Ethmoid operation performed through small external opening. Viewed slightly sideways showing destruction of floor of frontal sinus.

After the trephine has penetrated about seven millimeters, a cavity will be reached. This cavity will be the nasal frontal duct, or the space of the frontal sinus. But in case these structures are absent, by continuing a short course further back, the operator will enter the nose. As soon as the instrument is felt to be within a free space, it should be removed, the plug of bone taken away and a probe used to demonstrate the sinus. Through this opening, with a fine chisel the anterior wall of the nasal frontal duct may be destroyed and a

considerable opening made from the sinus into the nose. It is possible to curette the anterior ethmoid cells through this opening; or, if they are diseased, this may also be done at the same time by a combined method through the trephine opening and through the external nose. The first step should be, in all cases to remove the anterior tip of the middle turbinated body. After currettage has been completed, the region should be cleansed and washed, the frontal sinus packed with gauze (which is afterwards to be removed from the nose), and the wound is to be closed up with sutures. The packing should be removed at the end of three days and the sinus very carefully irrigated, if it contains any pus. (Cuts 6 and 7.)

The accompanying cuts show sketches made from an actual specimen on which operation was performed, and where the ethmoid cells were curetted through the trephine opening. It shows very well how completely the floor of the nose has been taken away, how perfect the drainage will be, and also the possibility of operating on the anterior ethmoid cells by this combined method.

The five points in this paper are:

- (1) That the frontal sinus may be absent.
- (2) That the posterior wall of the frontal sinus which supports the anterior lobe of the brain may vary from 4 to 40 m. from the nasal frontal duct.
- (3) That the investigator is mistaken in believing that he has entered the frontal sinus when, as a matter of fact, he has entered an ethmoid cell. Operations conducted under this belief are dangerous, for the roof of an ethmoid cell are only on a level with the frontal sinus.
- (4) The directions and position of the nasal frontal duct vary considerably, and if varied, are more oblique. Obliquity of the duct increases the danger of intra-nasal operation and brings the posterior wall nearer the nasal frontal duct.
- (5) That the olfactory fissure is an element of danger.

LEUKAEMIA OF THE FRONTAL SINUS IN A CASE WITH SUPERNUMERARY SINUSES IN EACH SIDE.

BY HAROLD BAILEY, M.D., WATERLOO, IOWA.

The subject of Leukæmia is always a most interesting one to the pathologist. The lymphatic variety is of very uncommon occurrence, and certainly the invasion of the accessory sinuses of the nose by this disease is extremely rare.

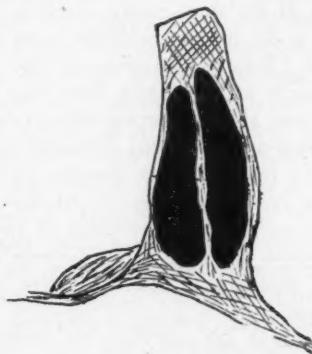
The patient from whom the specimen was taken was a man of middle age, who came under the care of a general surgeon, suffering from extreme pain over the right eye, in the region of the frontal sinus. A diagnosis of empyema of the right frontal sinus was made. The man was informed of his condition, and readily gave his consent to any procedure which would afford him any relief. Accordingly, under chloroform anæsthesia, the right frontal sinus was opened and drained. The operation was followed by no amelioration of the pain, and shortly after symptoms of meningitis developed, soon to be followed by a fatal termination.

The autopsy, at which I was invited to be present, revealed the existence of a double frontal sinus on each side. The secondary sinuses in each case lying immediately behind those in the normal situation, and corresponding very closely to them in size and shape. Each sinus was distinct and separate from the others. Each posterior sinus opened by a separate passage into the middle meatus of the corresponding side. Neither passage had any connection whatever with the openings from the anterior sinuses. The right posterior sinus was found filled with pus and caries of the posterior wall was present. On removing the skull cap a diffuse, suppurative meningitis was disclosed; which had resulted evidently from direct extension from the right posterior sinus, and which had proved the immediate cause of death.

While the anterior boundaries of each of the anterior cavities were somewhat thinner than common, yet there was not as great a discrepancy as existed in the posterior walls of the cavities lying immediately behind. Here on each side a mere shell of bone separated these spaces from the interior of the cranium. In the case of the sinus on the right side this thin partition, as a result of the weakening of the bone plate, from degeneration, assisted possibly by increased pressure within the sinus, had given way and a very small

perforation was the result. The anterior and posterior cavities on either side were separated from each other by a very thin but quite dense lamina of bone. This lamina on the right side showed no evidences of the caries which had involved the posterior wall. The mucous membrane lining all the sinuses was markedly swollen; so much so as nearly to fill the sinus cavities.

Four pieces of mucous membrane taken from the four respective sinuses were given me for microscopical examination. No suspicion of the true condition existing, was entertained at this time. The specimens were hardened in a solution containing equal parts of Mueller's Fluid and ten per cent formalin; imbedded in paraffin and stained after the method of von Giesen. The specimens all showed a similar condition as seen in photograph. The mucous and submucous tissue was infiltrated with lymphocytes in a most striking manner. This infiltration was uniform and of about the same degree



in all of the specimens examined. The regions immediately surrounding the blood vessels were, on the whole, more densely packed with lymphocytes than other localities. Several of the blood vessels seen in cross section revealed the lymphocytes lying within the lumen of the vessels, interspersed with the red blood corpuscles. The upper right hand portion of the photograph shows a vessel cut in longitudinal section with several lymphocytes seen scattered among the red corpuscles. To the left and below, but less distinctly seen, is a vessel cut in cross section, showing two or three lymphocytes within its lumen. In the upper portion of the field is seen the mucous membrane lining the sinus and wedged in between the epithelial cells, here and there may also be seen occasional lymphocytes. (This was shown more clearly in one of the other sections.)

This case has a two fold interest in that it exhibits anatomical as well as pathological peculiarities, neither of which are common. To have exhibited in the same patient, in addition to the pathological condition above referred to, the interesting anatomical anomaly of a double frontal sinus on each side, is quite a striking coincidence.

The uncertain process of bone resorption by means of which these cavities are created favors in the highest degree the occurrence of the greatest departures from the normal in both size and shape. Indeed, it would be a difficult problem for an anatomist to attempt to define with accuracy the dimensions of what should constitute a typical frontal sinus. Hajek "Pathologie und Therapie der endzündlichen Erkrankungen der Nebenhöhlen der Nase" mentions among others the following departures from the more common forms.—Displacement of the septum between the sinuses to either side. Opening connecting the two sinuses with each other. Entire absence of septum whereby the sinuses coalesce to form one cavity. Unusual extension of the sinus cavity upwards. Extension backwards even as far as the junction with the lesser wing of the sphenoid in some cases. Extension downward deep into the superior nasal spine. Owing to malformations, there may be a communication between the sinus and the corresponding orbit, or even openings between the sinus and individual ethmoidal cells. Zuckerkandl saw in one case, as a result of senile atrophy, an opening by means of which the frontal sinus communicated with the cranial cavity. It would seem, therefore, that the occurrence of two sinuses exactly alike in size and shape, far from being the rule would be, on the contrary, quite the exception if indeed it might not be considered even as a coincidence.

While the variations in size and shape are common, I believe, the presence of additional sinuses entirely distinct and separate from those in the usual situation, are of quite infrequent occurrence. More extensive investigations, may, however, reveal their existence more frequently than we now suspect. Certainly in operating for empyema of the frontal sinus, it were well to bear in mind at least the possible presence of these additional cavities and their corresponding liability to undergo the same pathological changes as affect the other accessory sinuses.

EXANTHEMATOUS ERUPTIONS FOLLOWING THROAT OPERATIONS.*

BY LOUIS FISCHER, M.D., NEW YORK.

Visiting Physician to the Willard Parker and Riverside Hospitals, Etc.

The frequency with which eruptions follow operations on the throat has led me to inquire into the nature of the rash, and note its effect. My observations are not by any means new. Similar rashes have been reported by Wyatt Wingrave, amongst others. Wingrave saw thirty-four cases of rash following the removal of tonsils and adenoids, in seven years.

Lennox Browne says that "after removal of chronically enlarged tonsils symptoms of pyrexia, rash, and desquamation, which are practically identical with scarlatina, are exhibited occasionally." In his article on "Hypertrophy of the Pharyngeal Tonsil," he says "that a traumatic fever may develop, accompanied with a surgical rash which partakes of the nature, and runs the course, of a roseola, not infrequently terminating in desquamation, and that on this account the term surgical scarlet fever is sometimes employed."

The rash generally appears on the second or third day after the operation, and may be papular, roseolar, or erythematous in type. It generally appears on the neck, chest and abdomen, but sometimes extends to the face and extremities. It lasts usually two or three days, but sometimes as long as five days. After reaching its maximum intensity it gradually disappears. Most cases terminate in desquamation, in some there is severe itching before the desquamation. There is usually very little constitutional disturbance, and the temperature is only one or two degrees above the normal, although some cases have a very high temperature.

Hoffa of Würzburg studied this question of exanthematous eruption following surgery. He believes that some cases cited as scarlet fever are accidental infections in which the diagnosis of scarlet fever is mistaken for that of erysipelas. In this same paper he believes that he has seen several cases of authentic scarlet fever associated with or immediately following surgical interference. Some eruptions simulating scarlet fever he describes as a form of simple erythema in which vaso motor disturbances may be the cause for the same.

* Read before the New York Academy of Medicine, Section on Laryngology and Rhinology, March 28, 1904.

He believes that the fibrin ferment in the blood is a causative element and cites Recklinghausen and Landois, who saw eruptions resembling scarlet on the skin of dogs after blood transfusion. Eruptions have frequently been seen after the use of anaesthetics. So also have eruptions appeared when carbolic or bichloride has been extensively used. These so-called bichloride or carbolic intoxicants are by no means rare. Scarlatinal affection frequently takes place directly by means of the open wound. Billroth describes the case of a little girl from whom he removed a papilloma of the tongue. On the following day she had fever followed by a scarlatinal rash on the chest. At first an erythema was suspected, possibly an infection from the tongue. The sutures were removed and the wound was found healing, and very healthy in appearance. The rash continued to spread over the whole body. It was followed by a distinct desquamation. Thomas Smith performed a lithotomy. Two days later a distinct scarlatinal rash appeared around the wound and spread over the back and extremities. This was associated with sore throat and was followed by desquamation.

Lannelongue operated on a tubercular child who was four years old. He incised an abscess on the elbow. On the following day a fine punctate rash appeared resembling a phlegmon. One day later the child had an angina and a typical scarlatinal eruption over the entire body. Two weeks later, after a very severe illness, desquamation appeared. A similar case was reported by Gerhardt, Gerhardt, *Arch. f. Klin. Med.* Bd. xiii, "Zur Naturgeschichte der Infektions-krankheiten."

Gerasimovitch reports forty-four patients out of 2000 operated on at the Children's Hospital, St. Petersburg, between 1897 and 1902, developed afterwards the so-called surgical scarlatina. The infection coincides with the trauma of the surgical intervention. This form of scarlatina is marked by the short period of incubation, the initial fever, the rash and desquamation around the wound, complications on the part of the wound, and, finally, by the absence of specific scarlet fever sore throat. Scarlet fever is classed by the writer as a wound infection liable to complicate any operation or wound the same as erysipelas, tetanus, etc." He believes that many cases of the so-called erythema following the use of diphtheria antitoxine should probably be regarded as surgical scarlatina. The article concludes with the bibliography on the subject, after presenting in an elaborate table the details of 36 of the surgical scarlatina on which the work is based. The period of incubation was less than twenty-four hours in 8 cases; less than 3 days in 13; less than

5 in 5, and from 12 to 66 days in the remainder. The course of the affection is mild, and none of the three deaths in the series could possibly be attributed to it.

Sir James Paget, in a clinical lecture delivered in St. Bartholomew Hospital, in 1863, describes a case of a boy in whom the operation of lithotomy was performed. The day after the operation an eruption exactly like scarlatina appeared over the whole body. He describes six cases seen, after operation, in private practice, and furthermore he gives notes of four more cases that occurred before or since. These cases he says may have been only casual coincidences of scarlatina with surgical diseases. Paget states that, therefore, he cannot doubt that there is something in the consequences of surgical operations which makes the patients peculiarly susceptible to the influence of the scarlatina poison. And, together with this susceptibility we may observe that the disease undergoes in them certain modifications, especially in the period of incubation, which is much shortened. In all the ten cases that I have noted, the eruption appeared within a week after the operation; and in eight of them within three days after it; namely, in two cases on the first; in three on the second; and in three on the third day. Other deviations from the typical course of scarlatina were, that in some of the cases the eruption came out over the whole surface at once, and on the limbs more fully than on the face and chest; in some there was no sore throat; in others no desquamation.

A physician incised an abscess in a child sick with scarlet fever. Shortly after this he used the same knife for an operation on another patient, and this was followed by a typical eruption of scarlet fever. Rieding cites a case of a girl in whom a lipoma was removed. A rash followed resembling erysipelas, which later was diagnosed as scarlet fever. Nephritis was associated with it. It was followed by desquamation. Rieding reports a series of cases in addition showing the association of scarlet fever after incisions were made.

Patin* describes a boy fifteen years old who suffered with a fracture of the humerus. This was followed by scarlet fever. There was desquamation and nephritis.

A case of Prof. W. Leube, a physician was accidentally wounded during a post mortem examination of a case of scarlet fever. This physician developed a typical scarlet fever nine days later. The attack was ushered in by vomiting. There seems to be a predisposition for the development of the scarlatinal infection after opera-

*Patin, "Ueber Scharlach bei Verwundeten." Diss. Wurzburg, 1884.

tions. Paget believes that *the period of incubation* is shortened by the presence of a wound. He illustrates this by citing the case of a child that was admitted in the hospital, operated on the fourteenth of February, and on the sixteenth of February a typical scarlet fever eruption appeared. The source of the infection was another child that was admitted for a bronchitis and developed a scarlet fever three hours later. Paget maintains that just as the period of incubation has been shortened, so also would the various complications be modified. We frequently have a typical scarlatinal infection without its usual complications, so that it would not be unusual to have some of the *usual complications* absent. Scarlet fever was noted at a time when no scarlet fever existed in that particular locality. The tenacity, or rather the persistence, with which scarlatinal poison adheres to clothing is worth remembering. Months after the infection existed the specific poison, most probably microbic, will remain virulent. Goodhart and Paley, in a contribution to the etiology of scarlatina in surgical cases, believes that the anti-septic treatment of wounds did not prevent the scarlatinal infection. Hoffa disagrees with Goodhart and cites with House, who studied an epidemic of scarlet fever in the surgical wards of Guy's Hospital in London.

The duration of the disease is much shorter.

The febrile symptoms are of much shorter duration. Olshausen* describes a series of eruptions occurring in 143 cases. He considers the exanthem true scarlet fever.

Simpson† describes the analogy between puerperal and surgical fever.

In Olshausen's 143 cases of scarlet fever after confinement, 64 died, or 48 per cent.

Rashes frequently follow burns and scalds; they cannot, however, be classed with scarlet-like rashes. Spencer Wells relates of a case of a bright red rash like scarlet fever that enters the body fifteen minutes after perchloride of iron has been applied to the uterus. Henry Leet‡ describes secondary eruptions on the skin after surgical injuries.

Wilks Budish, *Med. Jour.*, 1864, and *Cheadle British Med. Jour.*, 1879, vol. 1, p. 75, states that patients with open wounds are very susceptible to scarlet fever. The most complete paper on this subject is the one by Edward C. Stirling in the *St. George's Hosp. report*, vol. x, 1879, which is well worth studying. He describes

* Arch. f. Gynaecol., bd. ix.

† Edin. Med. Journ., vol. 2, p. 414, third series.

‡ Lond. Lancet, Jan. 4, 1868.

seven cases of scarlet fever occurring after circumcision. The eruption ran an ordinary course, followed by desquamation, in some instances by the sequelae. Certain drugs, such as belladonna,

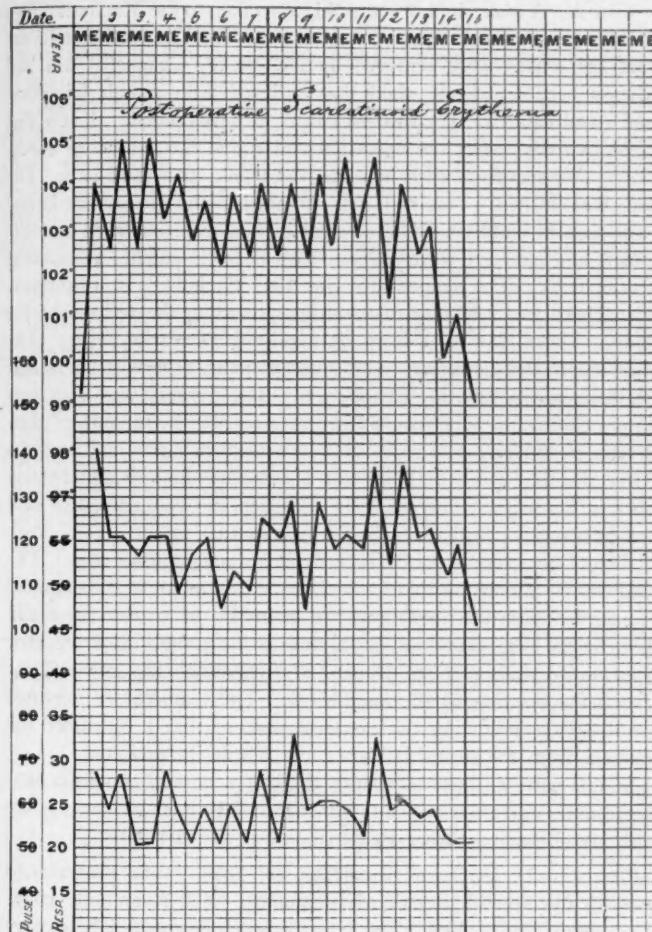


Chart 1.—Case I.

copaiba, quinine, chloral, salicylic acid and ptomaines cause eruptions. Tainted canned foods are also liable to cause eruptive conditions.

Kidd describes a rash following delivery. This rash was of a rose color, which he called roseolar uterina.

The following cases will illustrate severe and mild forms of rash following throat operations, as seen in private practice:

Case I. A male child, 7 years old, was taken to the Manhattan Eye and Ear Hospital during the winter of 1902. The mother told me that his tonsils were removed by Dr. W. F. Chappell. He had always been a delicate child that suffered with mouth breathing and nasal catarrh. He was backward in development. I saw this child two days after the operation and found the following condition: A punctiform rash involved the trunk, arms and legs. The face was flushed. This rash corresponded to the diffuse scarlatinal rash seen in children. The cervical glands were enlarged and the tonsils and pharynx were covered with necrotic patches resembling scarlet fever. The temperature was 104° F., pulse 140, respiration 28. There was a history of vomiting preceding the redness of the body. There was no history of exposure to scarlet fever. The child sat in the dispensary with other patients, otherwise there was no distinct exposure to scarlet fever. The pyrexia was of a persistent character. The temperature rose to 105° F. in spite of antipyretic treatment. The child showed a distinct scarlatinal toxemia. After the first week of treatment I detected albumin and hyaline casts in the urine. The child did not sleep and complained of pain and headaches. Both ears discharged, so that in the second week of illness he suffered with acute nephritis and double otitis. The case was so interesting that I asked Dr. W. Brannan in consultation. He agreed with me regarding the diagnosis of scarlet fever and thought the persistent high fever due to the condition of the ears. The family suggested Dr. Dench, who examined the ears and enlarged the opening in the middle ear. The temperature persisted for five days following the ear treatment, so that I concluded the toxemia from the nephritis caused the febrile disturbance.

In this case we have a healthy child in a normal condition subjected to an operation on the throat. Two days later he comes down with a rash having throat symptoms, otitis and nephritis.

Case II.—D. F., born September 28, 1898. Was prematurely born in the seventh month of pregnancy. She is an only child. Her parents are healthy. The family history is good. The mother has had one miscarriage at three months. This child was nursed at the breast about four months, and then put on Mellin's food. She has always had dyspeptic difficulties associated with continuous constipation.

Her teething began when nine months old. Her walking commenced at seventeen months. She then had pneumonia. Is susceptible to bronchitis and tonsilitis. Had a very bad attack of dysentery in the summer of 1901. Has a large hernia, for which she is treated by Dr. De Garmo. She had a second attack of pneumonia in October, 1902.

Adenoid vegetations were recently removed by Dr. H. Jarecky, after which the child's condition was normal. She is a very nervous child, and has always had marked evidences of rickets. Carious teeth, Harrison's groove, and the funnel-shaped depression of the thorax is well marked. Her present illness began with vomiting and a temperature of 104° F. An exanthematous rash covered the

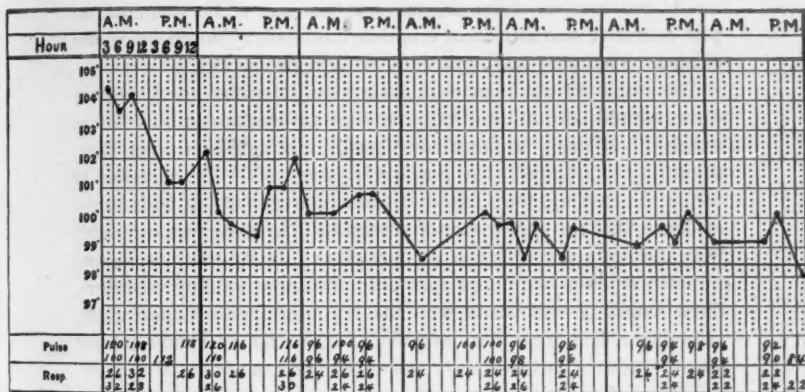


Chart 2.—Case II.

entire body. Several membranous patches were plainly seen on the pharynx and tonsils. A culture taken showed the absence of Klebs-Loeffler bacilli. The glands of the neck were enlarged. A diagnosis of scarlet fever was made.

Case III.—Ruth F., 3 years old, was a very nervous and restless child. Her mother said that she was bottle-fed, and had been constipated most of the time. She was backward in walking, in talking, and in teething. As an infant she was more or less dyspeptic. For the last year she is a bed wetter, snores during sleep, breathes with her mouth open, and seems to be hard of hearing at times. There is a slight cough. The child's body appears frail and appears backward in development.

Diagnosis :—Adenoid vegetations, hypertrophied tonsils, atony of the stomach and bowels. The operation for the removal of the adenoids and tonsils was performed by Dr. Freudenthal with the usual aseptic care. The instruments were sterilized, and the child given all the attention that is possible with competent nursing, etc. Three days after the operation I was sent for because an eruption appeared. It was a fine pin point eruption occupying the site of the hair follicles and having a very deep reddish color. The rash first appeared on the abdomen, neck and back, later on the extremities and face. The temperature was 101° F. in the morning, and 103° F. in the evening. The glands of the neck were swollen. The tonsils and pharynx showed evidences of necrotic patches. In about a week the temperature was normal. The rash had faded and a furfuraceous desquamation was noticed. The diagnosis of post operative scarlatiniform eruption was made. No complications ensued. The child was apparently well in two weeks.

The cases are not numerous enough to determine the import of these variable deviations from the type of scarlatina; but that in which all of them, whether complete or incomplete in other characters, agreed, namely, the *very early period after the operation at which the rash appeared, deserves particular notice*. It adds to the evidence, that the *appearance of scarlatina* is in some way connected with the *early consequences of operations*. If it were not so, and if patients after operations had only the same liability as others, there would be no reason why the eruption should appear early, rather than late, after the operation; but, so far as I have seen, it always appears early—always within the first week.

Two explanations may be offered for this fact. Either the condition induced in a patient by a surgical operation is one that gives a peculiar liability to the reception of an epidemic or contagious morbid poison, and any one of these, being imbibed immediately after the operation, produces its specific effect in much less than the usual period of incubation; or else those who suffer with scarlatina within a few days after operations had previously imbibed the poison, but would not have manifested its effect so soon, if at all, unless their health had been exhausted or disturbed. The second of these explanations appears rather more probable; for it is in accordance with what has been observed when many persons have been exposed to the contagion of fever, and some have been afterwards exhausted by fatigue or otherwise. These have had fever; while those who rested after exposure have escaped it."

Various pathogenic bacteria are found in the throat under normal conditions, among these are the streptococci, Klebs-Loeffler bacillus and the staphylococcus.

A smear taken from the pharynx or tonsils and inoculated on the surface of blood serum or agar will invariably show numerous micro-organisms. Children having adenoids and hypertrophied tonsils usually show a subnormal exterior. They are pale as a rule, have enlarged lymph glands, are peevish and irritable by day and suffer with insomnia at night.

The removal of enlarged tonsils or adenoids opens a direct means for infection, *provided virulent bacteria* exist at the time of the operation. The question arises, can such exanthemata be prevented, and if so, how? It seems to me that the question of prophylaxis is very important, if it is attainable from the study of the bacteriology of the nose and pharynx.

We note that pathogenic bacteria are frequently present. This can be easily verified. I have had a large series of cultures taken from children at random as they appeared in the children's service of a dispensary in this city, and was surprised to find living Klebs-Loeffler bacilli without any evidence of inflammation or pseudo-membrane in apparently healthy throats.

Conclusions :—From the experience given this evening and from a careful study of the literature of this subject, I believe that exanthematous eruptions such as scarlet fever or measles have nothing to do with the operation itself. That the infection evidently took place before the operation. That the period of incubation might have been shortened, and that the disease appeared sooner owing to the traumatism. The question of prophylaxis by means of local pharyngeal antisepsis to destroy pathogenic bacteria in these regions is one that deserves attention. It is important to ascertain if possible whether or no our patient has been exposed to any infectious disease for a number of days prior to the operation. The thermometer would be of valuable assistance. If the temperature is above normal would it not be better to postpone operative procedure until normal conditions are established?

I believe the infection takes place before the operation, and that the operation itself lowers the resistance of the body, and shortens the period of incubation. This will account for all of my cases and those reported by many clinical observers, being called surgical scarlet fever, when in reality they are true cases of scarlet fever, infected prior to the operation.

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 M. Trebat relates the case of a child that was convalescing from measles. An incision was made into an abscess at this time. This was treated for fifteen days with a drainage tube. A fistula remained which was incised. On the following day there was a severe rise of temperature, sore throat and a general scarlatinalform eruption. M. Hardy diagnosed scarlet fever. Desquamation occurred.
 Henoch relates the case of a boy who had a pectoral abscess, *Charité Annalen*, 3 jahrgang, 1876.
 It was incised with antisepsis. Three days later there was a marked rise in temperature and a rash appeared on the face, arms, and inner side of the thighs which spread to the back and thorax. Many miliary vesicles were seen on upper part of thighs. The tongue was white in the middle, with tip and edges red. The papillae were very prominent. Ten days after the appearance of the rash, desquamation commenced over the entire body which lasted twelve days. Henoch considers this case scarlet fever on account of the rash, angina, milia, and the characteristic peeling.
 The total number of cases of scarlet fever in the Great Ormond St. Hospital in twenty years, in surgical cases was 163.
 Clinical Lectures, Sir James Paget, 1st edition, p. 350.
 Dr. Gee, Article on scarlet fever. System of Medicine, vol. 1, p. 350.
 Ziemssen's Cyclopaedia Eng. Translation, vol. 2, p. 84.
 Filippow records 16 cases of influenza complicated by scarlatina.
 Kramz ztyl *Jahrbuch f. Kinderheilk.*, Band xxxiv, records an epidemic of influenza in Warsaw accompanied by scarlet fever-like rash.
 Rubella or roetheln usually resembles measles rather than scarlet fever. In some epidemics, rubella more closely resembles scarlet fever than measles.
 Filatow, *Arch. f. kinderheilk.*, 1886, reports mild scarlet fever cases during an epidemic of influenza.
 Clement Duker, *Lancet*, March 3, 1894, describes distinguishing features between epidemic aroseola and scarlet fever.
 A red rash is frequently seen during suppuration, due to septicæmia. Diagnosis, says Ashby in a difficult case, may be out of the question, but in any case it can only be arrived at by collecting all the evidence available, weighing it carefully, and giving no one piece of evidence a fictitious importance.

CHOLESTEATOMATOUS DISEASE OF THE TONSILS.

BY NORVAL H. PIERCE, M.D., CHICAGO.

If some may deem an apology necessary in introducing such a time-worn subject as that which prefaces this paper, I shall plead at least a novel manner of treatment of the subject and that I believe new points are brought out for your consideration.

The supratonsillar fossa is an irregularly shaped cavity situated above the tonsil between the anterior and posterior pillars of the fauces. Its roof is supplied by the upper leaf of the soft palate; its floor by the tonsil and anterior and posterior pillars, where they join the tonsils; its outer wall by the tonsillar fascia; and its inner wall by the anterior and posterior pillars and what has, as far as I am able to discover, not been described, a fold of mucous membrane which I shall denominate as the *plica triangularis superior*. The significance of this fold from pathologic and therapeutic standpoints will be dwelt on later.

It may well be called the *superior triangular fold* in distinction to the *plica triangularis* with which we are all familiar and which may now be designated the *plica triangularis inferior*. As the base of the



Fig. 1. Tonsillar Explorer.

plica inferior is attached to the anterior pillar, the base of the *plica superior* is attached to the posterior pillar and runs forward to be lost in the anterior pillar.

In order to examine the fold, and any examination of the throat is incomplete without a thorough exploration of this region, it is well to put it on the stretch, and this is best done by inserting a blunt tenaculum (Illustration No. 1) back of the anterior pillar and pulling it forward and in this way, too, do we best expose the supratonsillar fossa. This fold varies in its development in different individuals. In some it is very pronounced; in others, rudimentary. The largest fold that I have seen measured eight millimeters, the measurement having been taken in the horizontal direction where the base leaves the posterior pillar. It is made up of mucous membrane in which occasional muscle fibers are found, derived from the palatal muscles.

On its inner surface we occasionally find lymphoid structures resembling tonsillar tissues.

The shape of the supratonsillar fossa is very variable and irregular. Usually by means of a probe we find that the outer portion extends in two conical extremities posteriorly and anteriorly up for a considerable distance into the soft palate. The same may be said of its inner portion. The floor is supplied, as before mentioned, by the tonsil; lifting the plica triangularis superior, or turning out the tonsil from its fossa by means of a blunt tenaculum, we see in the so-called tonsillar helix minute openings which correspond to the lacunae within the substance of the tonsil. Farther outward is to be found a cavity which lies between the tonsillar substance proper and the tonsillar fascia. This cavity is fairly constant in its occurrence, and, from a pathologic standpoint is, to me, of great importance. This may be called the appendix of the supratonsillar fossa. It is not an enlarged lacuna, but is an anatomical space surrounded by epithelium derived from the mucous membrane of the supratonsillar space and

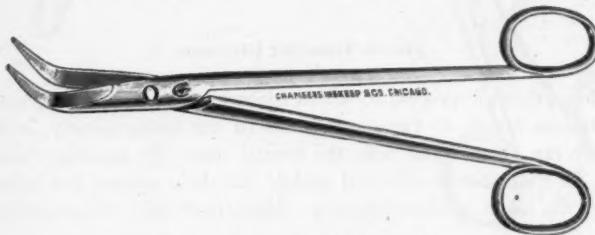


Fig. 2. Tonsillar Scissors.

which extends downward to a line drawn at the base of the tonsil or farther downward approaching the sinus pyriformi, where it ends in a blind extremity. It has a diameter varying from one to several millimeters. The supratonsillar fossa and its appendix are supplied by the tonsillar artery, or arteries, the tonsillar nerves, and the whole is supplied by squamous epithelium.

Passing to the pathology of the supratonsillar fossa, I shall direct your attention to two conditions which are the most important and frequent in occurrence, namely, metaplasia of the epithelium and peritonsillar abscess. Metaplasia of the epithelium within the crypts of the tonsils may occur at any portion, but is not infrequent in the depths of what we have described as the appendix of the supratonsillar space. Frequently by exploring the dilated crypts emptying into the helix of the tonsil we may find whitish, foul-smelling, waxy masses which are the result of the metaplastic process. These

have been erroneously regarded as decomposed food which has become lodged in the lacunæ. This process is not confined to the crypts of the tonsil, but may occur from the diseased epithelium of the supratonsillar walls themselves.

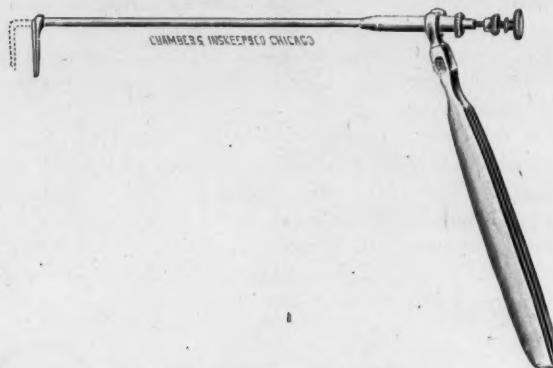


Fig. 3. Tonsillar Divisor.

The pathologic process to which Siebermann has given the name metaplasia occurs in various portions of the body, namely, in the middle ear, the mastoid cells, the frontal sinus, the maxillary sinus, etc. In the mastoid cells and middle ear these masses are known under the name of cholesteatoma. *Macroscopically and microscop-*



Fig. 4. Peritonsillar Abscess Knife to be used only in those rare cases in which a fibrous capsule prevents the insertion of the divisor.

ically I have found that the plugs from the tonsils, or supratonsillar space, are indistinguishable from cholesteatoma of the ear, except that the masses in the tonsils have no limiting membrane; in fact, they are produced by the same causes—exfoliation of epithelium, fatty degeneration, and finally decomposition of the mass.

As to what the ultimate cause of the disease is, that is, the cause which produces the exfoliation of the epithelium, we are ignorant; but the presence of an acid medicine is peculiarly constant in all places where this process occurs, though natural reaction is normally neutral or alkaline. I have also discovered a bacillus on the tonsillar masses which resemble the bacillus tuberculosis and which are very

likely identical to the bacillus found in cholesteatoma of the ear; whether it is due to an invasion of the crypts by the epithelium of the tonsillar surface, I am undecided, but the chronicity of the process is probably due, in part at least, to retention. As soon as one layer of epithelium is cast off the process of metaplasia or degeneration of the underlying surface epithelium is repeated, and thus layer by layer the plugs are formed. This eccentric increase may produce pressure sufficient to cause pressure atrophy of the tonsil surrounding the walls of such cavities as are related, or if the tonsillar substance is invaded by pathogenic micro-organisms, hyperplasia of the tonsil parenchyma and tonsillar substance itself is increased, while the lacunæ, or crypts of the tonsil, undergo dilatation. I believe this to be a frequent cause of tonsillar hyperplasia.

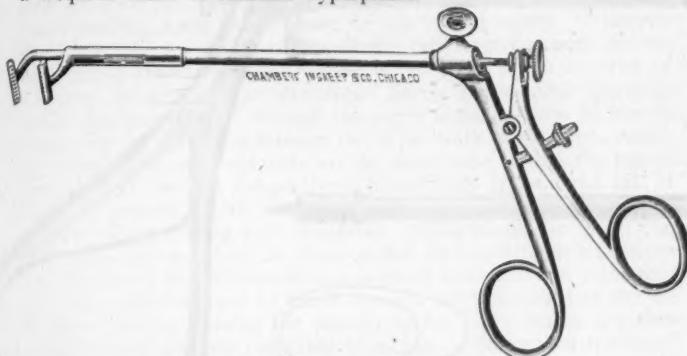


Fig. 5. Tonsillar Haemostat and Forceps.

Permit me to accentuate the importance of the supra tonsillar appendix in this regard, inasmuch as this is a cavity which is frequently occupied by these malodorous plugs. In the removal of the tonsils we do not, by the ordinary methods include this cavity—indeed, I regard it as dangerous to cut outside this space, as it is in almost immediate contact with the fat which separates the tonsil from the tonsillar fascia, and this leads me to call your attention to the peculiarity of the blood supply of the tonsil.

If we remove the tonsil from its niche we come upon a hard firm fibrous fascia which sends septa into the parenchyma of the organ. Immediately outside of this we find fasciculi of the *musculus pterygo-pharyngeus* and *bucco-pharyngeus*. Further out we may come to a space occupied by fat which is divided into a posterior and anterior portion by the *musculus stylo-glossus* and *stylo-pharyngeus*. The posterior portion accommodates the *carotis interus*, *vena jugularis* and the *nervus vagus*. The *carotis externa* and *interna* cannot be wounded in a tonsillotomy in which the incision is sagittal, but the majority of dangerous hemorrhages are in all probability due to the

wounding of the tonsillar arteries at their point of egress through the tonsillar capsule. The arteria tonsillaris is derived from the arteria palatina ascendens, which on a level with the tonsil divides into two branches which penetrate the tonsil fascia and enter directly into the tonsil. A large branch is frequently sent to that portion which lies at the outer extremity of the supra tonsillar space, but for the most part, the upper portion of the tonsil is relatively poorly supplied with blood.

The great danger then, in excision of the tonsil is the division of the tonsillar arteries as they emerge through the tonsillar fascia. When this is done the fascia does not permit them to retract nor contract, but holds them open and the blood pressure is sufficient to wash away any clot that may form until such blood pressure is

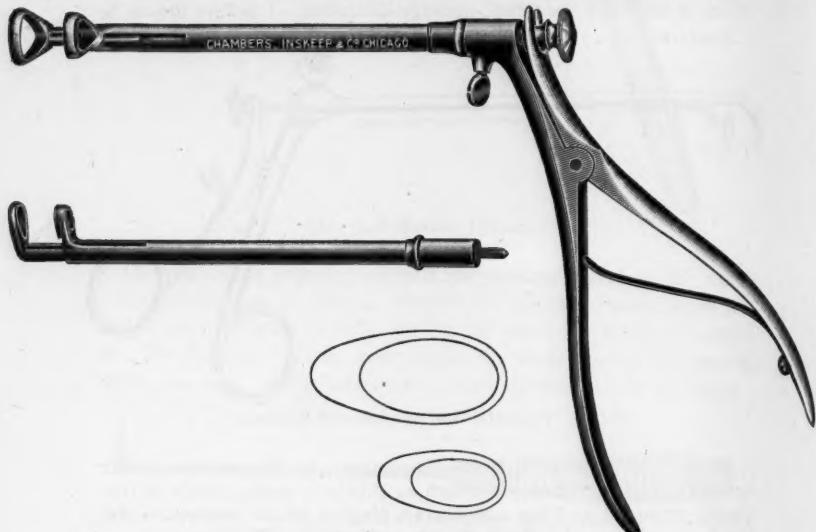


Fig. 6. Tonsillar Punches.

greatly reduced by exsanguination. Demi, ("Ueber Gefassanomalien im Pharynx," *Wiener klinische Wochenschrift*, 1901, No. 48), suggests that a number of profuse hemorrhages following tonsillotomy may be explained by the wounding of the arteria lingualis. That this artery does occasionally send a loop into the tonsillar niche directly outside of the fibrous tonsillar capsule, cannot be doubted.

My experience would lead me to believe that the majority of profuse hemorrhages after tonsillotomy is due to wounding the arteria tonsillaris (or its branches) at the point where it perforates the tonsillar fascia.

In order to destroy the blind sinus which I have designated the appendix of the supra tonsillar fossa I have had made a pair of scissors which I herewith present. After tonsillotomies I am in the

habit of inserting one blade of the scissors into the sinus and dividing it. Care must be taken that the walls of the sinus are kept open. This is readily done by tearing apart any of the adhesions after the third day, which is accomplished with the blunt tenaculum; the surfaces are then rubbed with nitrate of silver fused on a copper probe. Especially is this important when we find on exploration that the sinus contains the foul-smelling plugs above mentioned.

In several instances in singers, I have noticed that notwithstanding the removal of the tonsils, laryngeal irritation continued until the slitting of the sinus was performed. Great benefit, in the majority of cases, followed immediately upon this procedure. Numerous instances of fetor exor yielded only to this operation.

When this metaplasia affects the supra tonsillar fossa, its permanent cure can only be effected by a removal of the entire upper pole of the tonsil. An adhesive process between the plica triangularis superior and the upper surface of the tonsil may change the supra-tonsillar fossa into a more or less closed cavity. I believe, from my observations, that this simple fact, together with the co-existence of cholesteatomous disease is the cause in the majority of instances, of peritonsillar abscesses. Surely peritonsillar abscesses are by far best reached through the supra tonsillar fossa by merely separating the adhesions between the upper walls of the supra-tonsillar space and tonsil; not only are we more sure to find the pus in this location, but the danger from hemorrhage is rendered nil. I herewith present a little instrument which I have invented for the purpose of evacuating such abscesses. (Illustration No. 3.) You will notice that the edges are blunt so that no hemorrhage is possible. The blades of the instrument are inserted outward, and somewhat upward, until the sense of touch conveys the impression of the instrument having entered the abscess cavity. The blades are then separated and the pus permitted to escape. Pressure on the tonsil will aid in the evacuation of the abscess while the instrument is held in place. (Illustration No. 5.)

After the subsidence of the acute symptoms of peritonsillar abscess, it becomes imperative to remove sufficient of the upper pole of the tonsil to allow the supra tonsillar space to drain permanently. If the tonsils are enlarged sufficiently to warrant their excision, these are removed, but more important than the removal of the lower portion of the tonsil, is the excision of their upper poles, by means of either the tonsillar punch, the scissors or the probe-pointed knife. I submit herewith an original instrument which has several advantages over many of the punches in use. (Illustration No. 6.)

First, its strength; second, the shifting shaft which enables us to change the cutting blades from right to left.

After the upper pole has been removed, our attention should be directed to slitting the cavity which we have designated the appendix of the sinus. Even after the most thorough exploration and operation, however, we will find recurrence of this cholesteatomatous disease of the tonsils in certain cases, and only by repeated destruction of the crypts in which such recurrences take place, may we hope for complete and permanent cure.

CALCULUS IN WHARTON'S DUCT COMPLICATED BY SUPPURATION, WITH INVOLVEMENT OF THE SUBMAXILLARY AND SUBLINGUAL GLANDS.

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Calcareous deposits in the faecal tonsils are not unusual. Instances of so-called "tonsilliths" are occasionally observed, and our attention is directed to these glands, by the statement of the patient, who offers the information that some gritty substance has been previously expectorated. This condition is generally associated with chronic follicular disease, when the crypts have become occluded by an inflammatory process, and the retained caseous material has undergone calcareous change.

Salivary calculi, however, are not so common, and when of appreciable size are apt to cause considerable discomfort. They may be found in any of the salivary glands, and Butlin¹ mentions the possibility of a concretion lodging in the duct of Blandin. (This gland is about the size of an almond, and is situated underneath the tip of the tongue.)

Any condition which disturbs the usual calibre of the salivary ducts or gives rise to a thickening or roughing of their internal coat, acts as an exciting factor in this affection. Chronic inflammation in the gland itself, micro-organisms in the ducts, or local irritation of the sublingual tissue are contributing causes in the production of these concretions. Though chemical analysis shows these calculi to be composed principally of carbonate and phosphate of calcium and magnesium, the lithæmic diathesis certainly predisposes the individual to such deposits.

Calculi in this region are found either in the duct or gland. The sub-maxillary is the most frequently involved. When the foreign element involves the gland, it may exist for some time without causing much annoyance. Puzy² reports a case of an adult, where the calculus was present for over two years, and had not caused much discomfort. Three months before its removal, an abscess formed in the submaxillary gland and ruptured of its own accord. Suppuration ceased but the swelling in the region of the gland continued. This tissue and part of the facial artery was removed at a

subsequent operation. The calculus found was one and one-half inches in length and a half inch in thickness. It weighed 115 grains.

When the duct is patent, local symptoms are not annoying. The patient may complain of a sore throat, or a feeling of fullness in the mouth. The quantity of saliva is at times noticeably increased, and a dull ache may be felt in the gland. These symptoms are usually aggravated whenever food is taken. If the duct becomes occluded, its distal end becomes dilated with secretion, and can be felt in the sublingual region. The gland increases in size and is tender to pressure. The secretion may find an exit, either alongside of the stone, or through a fistulous opening. When this occurs the swelling of the duct and gland gradually subside. These symptoms may appear during the passage of small concretions.

Phosphatic deposits are seldom found in early life, though Browne³ mentions the removal of a calculus weighing seven grains, from Wharton's duct, in a boy, eight years of age. The history of my patient is as follows:

Mr. E. C., 18 years of age, presented himself at the office, complaining of difficulty in swallowing and inability to open the mouth to any extent. Deglutition was very painful, and no solid food had been taken for four days. He had a similar attack three years ago, and Dr. J. Shears, who kindly referred the patient to me, had removed at that time a small stone from the sublingual region. The symptoms then were not severe, and had not caused much annoyance. No cutting was necessary to liberate the calculus during his first attack.

The patient's external appearance resembled the clinical picture of an advanced quinsy: His mouth was slightly open, saliva was oozing from between his lips, the tongue was raised above the edges of the lower teeth, and protruded. There was a brawny swelling extending from the angle of the jaw, left side, to the submental region. The submaxillary and sublingual glands were swollen and very tender to pressure. Inside the mouth, the sublingual tissues were decidedly swollen on the left side, and painful to the touch. Examination was difficult, owing to the patient's inability, on account of pain, to open the mouth. Pus was seen in the opening of the papilla, through which Wharton's duct empties. A slender probe was introduced into this orifice, and having passed a distance of an inch, its progress was arrested by some hard substance. On removing the probe, some pus flowed from the puncta. The temperature at the time was 102 2-5°F.; pulse, 110.

Under cocaine anaesthesia and aseptic precautions, an incision was made into the sublingual tissues, about an inch in length, starting alongside of the papilla and directed posteriorly, on the left side. The cut was dilated with a dull retractor, and the probe was again employed to locate the foreign body. Not being able to grasp same with the forceps, a dull wire aural curette was used and the calculus was dislodged after some little manipulation. As soon as the obstruction came away, about two drachms of pus drained from the wound. It was interesting to observe, that pressure over the submaxillary and sublingual glands increased the quantity of pus, showing that both glands were involved in the suppurative process.

Peroxide of hydrogen was applied to the cavity, and after the parts had been cleansed, a drain of nosophen gauze was introduced. On the following day the temperature was down to normal, and the patient felt decidedly improved. Pus continued to drain from the wound for three days, and the same treatment was carried out. On the fourth day, pressure over the sub-maxillary gland caused a clear fluid (salivary secretion) to flow from the opening under the tongue. The external swelling persisted for a week, though no annoyance was experienced after the fourth day. The wound healed nicely under an antiseptic mouth wash, and no fistula resulted.

This calculus, which was three-quarters of an inch in length and one-quarter in thickness, had evidently occluded Wharton's duct, and had obliterated, for the time being, Bartholine's duct where same entered the former channel. The ducts from the sublingual gland are numerous, and a few come together and form Bartholine's duct, which empties its contents into Wharton's duct. It was at this junction that the calculus had formed, as both glands showed symptoms of retention.

The young man casually informed me that his father suffered from calcareous deposits, which were passed at times in the urine. With such a history we may assume the probability of hereditary predisposition.

Calculi found in the ducts usually assume the form of these tubes. In the glands, however, they reach considerable size. Eagle⁴ reports an instance in which the stone removed from the submaxillary gland in a male 42 years of age, weighed one and one-half ounces avoirdupois, and measured one and one-half inches in length, and one and one-eighth inches in width, and one inch in thickness. The patient came near choking to death from spasm of the glottis. He was unable to eject the mucus and saliva, and it entered his larynx.

The removal of the stone was easy, as one end of it was exposed and freely movable.

It is not always a simple matter to diagnose the condition. This is especially true when suppuration has occurred, and a mass of granulation tissue surrounds the calculus. Several cases of such a character have been mistaken for malignant disease, and in one case, Keppeler¹ mentions the removal of a tumor supposed to be malignant, extending from the symphysis of the jaw to the hyoid bone, which proved to be inflammatory thickening around salivary concretions. This region is abundantly supplied with lymphatics, which promptly become involved in the septic process, and offered the clinical aspect of a severe cellulitis of the cervical area.

An exploring needle or a free incision will often clear up the diagnosis.

58 East 75th Street.

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Tuberculosis of the Larynx and the Tuberculin of Denys—

M. L. DE PONTHIERE, DE CHARLEROY—*Ann. d. mal de l'oreille, du larynx, du nez et de pharynx*, Paris, Aug., 1903.

The author reports three cases in which the tuberculin of Denys seems to have had a curative action on the bacillus of Koch. The serum is very toxic, and it is necessary to commence with very small doses. In 174 cases of tuberculosis which had been inoculated, Prof. Denys obtained 51 cures (29 per cent); 12 almost cured (6 1-2 per cent); 64 ameliorated (36 1-2 per cent) and 47 resulted unsatisfactorily. In the first category, the average duration of the disease was eight months.

W. SCHEPPEGRELL.

PAROSMIA: WITH HISTORY OF A PECULIAR CASE.*

BY CARL E. MUNGER, M.D., WATERBURY, CONN.

Assistant Surgeon Manhattan Eye and Ear Hospital, New York; Laryngologist and Aural Surgeon
Waterbury Hospital.

Although cases of Parosmia are comparatively infrequent, still they are sufficiently numerous to make some attempt at a classification at least as regards etiology. In a prepondering proportion of the cases of perversion of smell the odors perceived are *offensive* to the patients themselves, so much so that the old name was "Kakosmia," meaning stinking smell.

The name Parosmia Subjectiva, and the statement that this "phenomenon is a neurosis," (1) indicate clearly that the perversion of the sense of smell is realized only by the person afflicted and is in no wise to be perceived by an outsider. All the cases that I have seen reported in detail have been those where the patient suffered to a greater or less degree from disagreeable odors, varying from the most offensive smell to one that was simply annoying.

Huglings Jackson has reported three cases. 1. One in which there were epileptiform attacks, the first attack being preceded by a "sharp smell crossing his nostril, and a second attack preceded by a complete loss of smell."

2. A person who had received, two years previously, a severe blow on the forehead. This man six months previous to his having fits complained from time to time of a queer smell, and just before an attack would exclaim, "What a queer smell," and become quite unconscious. (3.)

3. The third case was a man 60 years of age (4) who suffered from epileptiform seizures associated with subjective sensations of smell. This patient ordinarily could smell nothing, but as the fits were passing off had a "stench in his nose."

Tresilian (5) relates a case of a young woman who complained of a constant nasty smell and frontal headache, due to injury of olfactory bulb, with laceration and possible separation.

H. C. Wood (6) reports a case of glioma of frontal lobe and olfactory bulb with hallucinations of smell; smelling always disagreeable odors. This man gradually grew worse and died.

* Read before the Section on Laryngology and Rhinology, New York Academy of Medicine, February 24, 1904.

Robertson (7) gives the report of a case of a woman, aged 50, operated on for cataract followed by iridochoroiditis lasting for weeks. One morning she was found suffering from a most noisome stench, which had begun as an unpleasant smell the night before and had become stronger and stronger. She could compare it to no smell that she had ever known before. She was given a hypodermatic injection of morphine, slept three or four hours; on waking the smell had disappeared, never to return. This Robertson called a neuralgia of a nerve of sense.

Hutchinson relates two cases of subjective kakosmia (8): 1. A gentleman who suffers from recurrence, during very short periods, of most abominable odors, which may occur any time during the day, or even night. He turns deathly pale, feels faint as if he were going to die, then in the course of a very short time a sensation of cold follows, attended by a most horrible stench. He never loses consciousness. He has had syphilis.

Case 2. Cruikshank, the anatomist, who died of apoplexy, had a very obtuse sense of smell, but whenever any circumstance occurred to excite painful emotions in the mind, he was liable to be assailed with the most poignant distress from the sensible expression of odors which were described as "horribly offensive."

Other examples of perversion of smell which are more or less traditional (9) are of a priest to whom everything smelt like a manure heap, or decayed cabbage; one man who could not smell vanilla, and an Englishman who could not perceive any odor in the mignonette.

The case which I wish to report presents a much more pleasing aspect. A gentleman, aged 50, who has been a generous liver, was suffering from severe headaches, and had been for some time, became conscious that he was overpowered with a persistent odor of what he described as "heliotrope." The odor was delicious, but ever present. All liquors gave off this odor, particularly aromatic ones. Cocktails seemed to be permeated with this odor; the axillary secretions seemed particularly strong of heliotrope; his skin seemed to distill the delicate odor of heliotrope. The perfumes of passing women all seemed to be the same heliotrope. Violet toilet water was heliotrope to him. Oranges, among the fruits, seemed to be most strongly perfumed with heliotrope. His perception of offensive odors remained normal. He could appreciate various odors met with in a barn and among horses with as much acuteness as ever. His perversion of sense of smell lasted for six months, and has gradually diminished until at the present time about all that is left of the heliotrope

smell is the odor that emanates from the axillæ, and which is still heliotrope. As well as he can remember, his parosmia came on gradually, as it gradually disappeared. He has had numerous haemoptyses in past years. He has been a rather large consumer of alcoholic beverages all his life. A diagnosis of general arterial sclerosis due to chronic alcoholism was made by an eminent neurologist. He was put upon K. I. gr. v. t. i. d., and was upon this for months, being greatly relieved of his headaches and the moderate amount of despondency from which he suffered. His sense of taste he said was in no degree altered. Intra-nasal lesions are unimportant.

As to the etiology of the various cases, some can be classed as hallucinations of the insane and epileptic, or due to a brain tumor, e. g., Wood's case of glioma of frontal lobe of the brain. Traumatic cases, due to cerebral injury, as in one of Jackson's cases, and in Tresilian's case

The one which I have related seems to be in a class by itself and was, in my opinion, due to the arterial sclerosis which was present to a marked degree, and which must have involved the olfactory lobe, affecting its nutrition primarily and its function secondarily.

For a general explanation of the *raison d'être* of parosmia, I can close in no better way than to quote Jackson's words:

"Defects of smell and defects of mind may seem to be things which can have little to do with one another, but the olfactory bulb has a geographical relation to a great part of what is believed to be an important division of the anterior lobe of the cerebrum, the chief organ of intellectual life."

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81 N. Main St.

SHOULD SPECIALISTS CHARGE PHYSICIANS FOR SERVICES?

BY S. S. BISHOP, M.D., F.I.D., CHICAGO.

Public discussion of this peculiar and important question, which seriously affects the large class of medical specialists, seems to have been avoided. Many specialists have complained to the writer of the heavy burden of free practice, which they are compelled to carry, on account of the large number of physicians and their relatives who expect gratuitous services. I have suggested to several of these gentlemen that they present their side of the subject to the profession and trust to its good sense and love of fair play to lighten the burden, at least.

None of these practitioners had the fortitude to present his case, probably for the reason that they all dreaded the possibility of becoming disliked and of being called mercenary. Hence, I have thought it worth while to give a specialist's side of the case as I have seen it and have had it portrayed to me innumerable times. I am aware that there will be a certain risk of incurring well-meant but uncomplimentary criticism and of alienating the friendship of those who do not realize the unjust and burdensome nature of the demands which they make on this class of physicians. But when one can truthfully say that a very large proportion of his practice for twenty-eight years has been in the nature of charity work, both public and private, as the writer can, and that many of these years have been passed in special lines, and in intimate association with many specialists, he ought to be credited with having adequate information on the subject in hand. Furthermore, there is no desire to be otherwise than frank and fair to all. Having been first engaged in general practice for fifteen years, I also readily appreciate the sentiments of the great body of the profession.

I have often been asked what my rule was in respect to making charges to physicians and their families. While in general practice, I never charged anything for services to either physicians or clergymen and their dependents; and during my practice as a specialist I have followed the same rule, except when they have insisted upon making compensation or have at least offered it, and such cases have not been few. For example, physicians from distant states have expressed themselves as follows: "I am not willing to take

free treatment, for I am not in a position to reciprocate your favor, and I insist on remunerating you for your services." My reply in such instances has been something like this: "I make no charge to physicians, but if you insist upon compensating me, I will leave the question of the fee entirely to you." If he presses me to name a fee, I tell him what the ordinary charge is and suggest that we divide it, which places the compensation on a par with clergymen's railroad rates. This may seem to smack of commercialism, but it may help the specialist to obliterate that nightmare of a mortgage, or may give his family an additional comfort when he and his bread-earning powers are no more, forever. The conscientious doctor from California, whose words are quoted above, and who had not, and could not have, the opportunity to lay me under obligations to him, is a type of a very large number of American physicians who are endowed with a high sense of true worth and honor.

But there are exceptions to the rule mentioned above. If a physician has abandoned his profession for mercantile pursuits, or has added them to his practice, or has combined real estate or manufacturing or mining enterprises with his profession, these additional sources of wealth should be taken into account in the transaction. If a patron is half doctor and half layman, he should contribute the half-layman share, at least, of the laborer's hire. This proposition seems so axiomatic as not to call for argument or illustration, and men of this class frequently offer to pay the usual fees, particularly when they have done the specialist no favor. Practitioners who are, for various evident reasons, without the pale of professional relationship, are classed on a footing with the laity. For example, in a number of instances, physicians have come for operation saying: "I want you to charge me the same as if I were not a physician; I am able to pay." And I have found sometime afterward that they were quack doctors, that they had made the most of their visits to my office and were exploiting my methods and instruments and instruction. Dear professional friends are these, and I have longed for another opportunity to operate upon them.

Young specialists who were making a beginning on an uphill road to success, and who had little to do beyond treating the destitute class of patients represented in our dispensaries, have many times, and very justly, complained of being, as it were, compelled to spend their time and to contribute their skill in treating people of affluence gratuitously, only because the patients were related to other doctors, who had never shown a courtesy to the specialist and who, in fact, were unknown to them. I have seen these young professional men, hardly knowing how they could scrape together enough money to

pay the next month's rent, working diligently for people who were loaded with diamonds and rich apparel, and then receiving a scant "thanks" for their services, and sometimes not even that.

This picture is not in the least overdrawn. It is an every-day experience. Specialists often find more of the commonly called "dead-head" patients waiting in their reception rooms for treatment than there are of pay patients. And these free patients are likely to be as punctilious and exacting and time-consuming as those who help the doctor to keep out of debt. It is not an unusual occurrence for free patients to prevent those who pay from reaching the treatment room until the latter are compelled to leave the office without even seeing their doctor. This means not only the loss of the treatment fee, but occasionally the loss of the patron altogether. And it is a delicate matter under such conditions for the specialist to endeavor to explain the situation to the free patient and to ask the slight favor of an opportunity to treat the hurried business man first. There is so much likelihood of uncomplimentary reflections; and doctors, like other mortals, are sensitive creatures.

People do not generally know that city specialists have continually under their care patients from all parts of this country and from the British possessions. There is no question about the fairness of the spirit of the Principles of Ethics, expressed in these words: "All practicing physicians and their immediate family dependents are entitled to the gratuitous services of any one or more of the physicians residing near them."

"When a physician is summoned from a distance to the bedside of a colleague in easy financial circumstances, a compensation, proportionate to traveling expenses and to the pecuniary loss entailed by absence from the accustomed field of professional labor should be made by the patient or relatives."

The principle enunciated here is probably honored by all physicians, whether in general or special practice. But it is clearly not contemplated that this rule, which specifically refers to "physicians residing near them," should be applied to physicians residing hundreds and even thousands of miles distant from them. But the latter application is the common one according to our experience. A specialist cheerfully gives his services to the family of a "physician residing near" him, and may confidently look forward to the time when the natural appreciation of his favor will be demonstrated by a reciprocal action. But he is treating physicians and their relatives who reside at such great distances that he has never heard of them, and may never again hear from them either directly or indirectly. They cannot send cases to him, and there is absolutely no reciprocal

relation between them. They take his time, his strength, his skill and the time of his pay patients, leaving no counter-balancing compensation whatever. The demand is all on their side, and the expenditure and sacrifice all on the side of the specialist.

But it may be urged that ours is a philanthropic profession. True, and I subscribe to the uttermost degree of obligation which rests on the most charitable and self-sacrificing of all the professions. But there is manifestly a limit to this obligation. It cannot be all and always on one side. There is a common-sense side. The doctor should generously take care of his medical neighbor and his family, and reciprocity should obtain between them. Even then, a wealthy physician should not require a poor young beginner to serve him gratuitously, else he is guilty of gross selfishness; he takes an undue advantage of his professional relationship. Again, physicians not "residing near" a specialist, or who are not in a position to refer pay work to him, should cultivate that sense of fairness which refuses to allow one to acquire something for nothing. The golden rule, if applied here, would be all-sufficient. It would prevent gross injustice on one side and would maintain a position of honor and self-respect on the other.

A member of the Chicago bar makes this pertinent observation on the question: "The practice of promiscuously rendering gratuitous service to members of the same profession does not prevail among lawyers; and there is no reason why it should prevail among doctors.

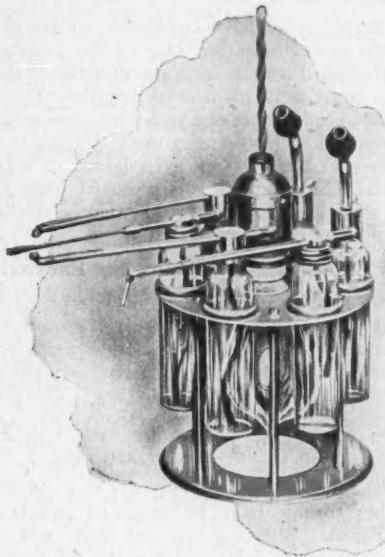
In determining the compensation that should be rendered to specialists by physicians and their families, who have shown no favor and who do not "reside near," one should consider the financial condition of these non-residents.

I confess that I have not lived up to my ideals in these matters, but it was because I have felt that there was a prejudice against any physician who was not glad of the opportunity to work for nothing. I have seen the rich doctor impose upon the poor one with the self-complaisance of a Chinese executioner, and I believe the time is come to check this spirit, so suggestive of mendicancy, and to inaugurate a system of fairness and self-respect, adapted to the present conditions of medical specialism. I hope that this plain English will be pardoned, especially when it becomes known that it is borrowed from the heart-to-heart talks of those who are deepest in the work. These men cheerfully take the tenderest care of the unfortunate members of our profession and their families from any and every region of our country; and it is a pleasure to reckon as their constant charge the 4,000 physicians, in and about Chicago, and their dependents, making a grand total of about 20,000 fellow citizens, whom it is their agreeable privilege to serve without money and without price. Add to these the vast army of free-dispensary and hospital patients committed to their care, and it is evident that the greatest heritage of the young city specialist is an unlimited labor of sweet charity.

THE ALTER-DE VILBISS SPRAY STAND.

BY FRANCIS ALTER, M.D., TOLEDO, OHIO.

That the use of warm, rather than cold sprays in the nose and throat, is superior, no one will question, but the problem of heating the medicaments is usually a vexatious one, entailing the loss of valuable time, and trying the patience of the busy practitioner, more than is conducive to the maintenance of good nature.



The Spraying Stand which is depicted in this article, is intended as a receptacle for atomizers usually used in office treatment, it is also arranged to heat the medicaments within the tubes, by an electric lamp placed in the center of the stand. In addition, a third element accrues, in that the lamp acts as a means of illuminating the cabinet, if one is used.

I am indebted to the DeVilbiss Manufacturing Company, of Toledo, Ohio, for their accurate construction of the stand, as suggested by me.

338 Summit St.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON LARYNGOLOGY AND RHINOLOGY.

Stated Meeting, March 23, 1904.

FRANCIS J. QUINLAN, M.D., Chairman.

A Case of Papilloma of the Uvula.

DR. HERMAN JARECKY presented this patient. When first seen the papilloma and uvula were intact but one of the assistants in the Sydenham Hospital clipped it off with a piece of the uvula and now the remainder was practically of normal length. The papilloma which was shown had been almost one inch long, and with the elongated uvula, one would have expected cough, dysphagia and other annoying symptoms—but the only one complained of was an occasional choking spell. The specimen was removed from a native of the U. S., aged 23. He complained of a slight nose trouble and on examination the papilloma was discovered.

A Case of Primary Lupus of the Pharynx and Larynx.

DR. MAX J. SCHWEID presented this patient with primary lupus of the pharynx and larynx which he considered to be quite rare. The patient had been under his observation for nine years and gave a history showing its probable existence for two years prior, making the history really cover a period of eleven years. The girl's father and mother lived to be 58 and 60 respectively; the father was drowned and the mother died of pneumonia. One sister is living, with a family of healthy children. There was no history of syphilis or tuberculosis in the family. For eleven years this patient has suffered. She dates her trouble from an attack of grippe when she complained of her throat. Within a year the entire soft palate and the uvula and the tonsils were destroyed and the epiglottis changed into a globular tumor; this had no worm-eaten appearance but consisted apparently of solid fibrous tissue. To exclude the possibility of its being syphilitic in character, active anti-syphilitic treatment was instituted. Mercury and the iodides aggravated the symptoms. The anti-syphilitic treatment was stopped and then she began to improve. Various caustics and medicines were used but the only benefit she seemed to derive was from pure lactic acid and this seemed to keep the ulceration under control. At times during the course of the nine years, new tissue would form so as to almost entirely close the opening between the oro and naso-pharynx. Within the last few months the process had again started, the ulceration extending from the posterior wall of pharynx backwards and possibly upwards. He asked for suggestions which might benefit the patient.

DR. EMIL MAYER said the case was a very interesting one because of its rarity. The duration of the disease and the number of years the patient had been under observation added to the evidence that this was an instance of primary lupus of the larynx which was an entity. It was not a pure tuberculosis because the patient would not have lived that long, i.e., eleven years, if it was simply tuberculosis. Dr. Asch in a paper read before the American Laryngological Association, reported a case of lupus of the larynx which Dr. Mayer had been able to follow for eighteen years before the patient died of tuberculosis. Dr. Mayer said that Dr. Schwerd did not bring out in his statement that tubercle bacilli had been found, although he had found a few bacilli. He thought this a good case to learn what could be done with the X-ray. Specially prepared apparatus could be easily obtained for treating this case.

DR. WOLFF FREUDENTHAL had seen this patient six years ago and at that time, he was not sure that he was dealing with a case of lupus or not. He then believed it to be either lupus or syphilis. The case cleared up and soon there was no doubt but that this was a primary case of lupus of the larynx and pharynx.

Regarding therapeutic measures he thought the Finsen light, or the blue light, could be tried in this case as in instances of lupus occurring upon the cutaneous surfaces.

DR. C. G. COAKLEY said that each case should be judged by itself. If there was no glandular involvement in the neck and if the age and general condition of the patient was favorable he believed operation should be the method of choice. It was very hard to tell the exact extent of the growth with the laryngeal mirror.

DR. JAMES E. NEWCOMB said that thirteen months ago he saw a woman at the Demilt Dispensary who had a slight swelling of the right ventricular band which increased in spite of anti-syphilitic treatment. He treated the case up to May when he went off service and did not again see her until the fall when she appeared for treatment at the Roosevelt Hospital Out-patient Clinic. The swelling had increased and there was some doubt regarding the diagnosis. Dr. C. H. Knight saw the patient and made the diagnosis of lupus. In due time a portion of the tissue was removed and submitted to Dr. Jonathan Wright, who confirmed the clinical diagnosis. The patient had an attack of pluerisy during the winter and disappeared from observation.

DR. C. H. KNIGHT suggested the use of a strong solution of nitrate of silver under cocaine. That was tried but the patient was found to be very intolerant of solutions of any great strength and a two per cent. strength was then tried; this also caused great local discomfort but no inflammatory reaction followed its application.

DR. SCHWERD closed the discussion by stating that nitrate of silver had been tried in pure form but it did not seem to have any beneficial effect whatever. Chromic acid; the acid nitrate of mercury, and other caustics had been tried without good effect and the only agent which did good was the lactic acid, in pure form.

The X-rays or the Finsen light had not been tried on account of the difficulty of applying such treatment in this case.

**Two Operated Cases of Double Frontal Sinusitis were Presented
by Dr. Lewis S. Coffin.**

DR. COFFIN said that the two cases were of interest in common on account of the incision which had been used.

This incision began practically at the outer end of one eyebrow extended along its lower border to the inner end of eyebrow, then following the natural curve of the frontal bone it was carried down onto the side of the nose to a level with the inner canthus of the eye, thence over the nose, and a similar incision was made along the lower border of the second eyebrow to its outer end. He was thus able to reflect the soft parts of the entire forehead.

CASE I was a young man 20 years of age upon whom Dr. Coffin had operated one year ago. The sinuses were very irregular. The right sinus, extending well over the left, had not been thoroughly curetted out and the operation had not been successful.

In doing the present operation, having determined that the left sinus was also diseased, Dr. Coffin, after having reflected the large flap as described, removed the entire anterior wall of both sinuses, as well as the septum and all bone over it.

The operation was done six weeks ago. There is but little scarring and the forehead is prominent, feeling as though a new bony wall were forming.

CASE II was a young woman about 30 years of age. Dr. Coffin said that although these sinuses were the largest he had ever seen, they were quite regular and symmetrical. He had removed practically the entire anterior wall of each, leaving the septum and a zone of bone about $\frac{1}{2}$ inch wide over it.

Very little scarring was noticed on either side. The operation had been done four weeks ago and the sinuses were rapidly filling with healthy granulations.

Dr. Coffin called attention to the fact that the general practitioner did not as yet seem to appreciate these troubles, saying that the last patient had been under the care of a very good man, who had treated the case as one of rheumatism, malaria, and last as neuralgia. Some friend had advised her to go to the Manhattan Eye and Ear Hospital, where she had fallen into Dr. Coffin's hands.

Case of Bilateral Sinusitis.

DR. C. G. COAKLEY presented a patient, 53 years old, who came to the college early in December. He had been treated at different dispensaries in the city for various catarrhal conditions of the nose. One of his assistants first saw him and noted pus in both nares. Some polypi were removed. Afterwards thick fetid pus was still found. A canula passed some one or two weeks later without trouble into the left frontal sinus. It was left there for a few minutes and, at intervals of ten to twelve seconds, pus would come from the canula, until eight or ten drops exuded. This was the only case he had ever seen where pus came forth in this way. He

could not pass a canula or probe into the right frontal sinus. The color on transillumination was dark red instead of the usual yellow-red. He was sent into the hospital and operation performed first on one side. The incision was made along the eyebrow. The parts were quite vascular and bled freely. The sinus was found to be filled with degenerated mucous membrane and there was a small amount of pus present. The septum frontalis was soft and the bone friable. The posterior wall was softer than usually was seen in the frontal sinus. The incision was extended across until he got into the right frontal sinus. This was opened and in curetting the partition was found to be so soft that he simply took a pair of forceps and removed the septum as far down as he could get. The parts were dressed by packing each separately. But little pressure was applied. The median portion had grown fast to the posterior wall and there was no communication between the two cavities. There was a small fistula still on each side. The interesting point regarding this was that just before operation there was a great deal of pus in the nose. Since the operation, for a few weeks only, there was but little pus and now there was practically none. The left antrum was quite clear, but the right was still dark, but not so much so as before operation. There were small polypi at the lower orifice of each nasopharyngeal duct, but none was present now. The left antrum contained little if any pus. A retrogressive process was now going on. On the right side, on the other hand, it was still unresolved and some thickening of the mucous membrane, with secretion of pus. He did not wash out this side because he wished to see how it would come out if left alone. He said he started out with the idea of operating upon both frontal sinuses and both antra, but the patient took the ether so badly that it was not deemed wise to continue operative procedure.

A Case of Extensive Removal of the Floors of Two Very Large Frontal Sinuses in the Same Patient.

DR. ROBERT C. MYLES presented this patient and asked for an expression of opinion regarding the case. The man was 45 years old and gave a history that for 30 years he had periods of severe pain and discharge from the nose, gradually growing worse and he had become desperate regarding it. He presented symptoms of frontal sinusitis. They began about 9 or 10 A.M., and he would be compelled to sit around all day, holding his head. His condition grew better with the approach of night. The patient was a clergyman and was anxious that he be not deformed. From the left antrum pus was seen to be pouring out, the pus was of a creamy consistency and had an offensive odor; this was washed through the natural opening and was apparently well for several months.

He removed the anterior ends of the middle turbinals, and then parts of the ethmoid cells and irrigated the frontal sinuses for several weeks, which at first were full of offensive pus. The patient apparently recovered and in two months' time there was no pus and no pain. The patient, after an acute cold, suffered from a return of

the old symptoms. Believing in the uselessness of further intra-nasal measures he decided upon an external operation and removed the floors of the sinuses, on the 8th of March, two weeks since. The eyes were further back than usual and deeply seated. He thought it better to remove as much of the floors as possible, and in doing this he went beyond the eye-ball; one side did well, the other side developed an orbital abscess, then followed severe and violent orbital symptoms and congestion of the retina; he made an incision $\frac{3}{4}$ of an inch deep, but did not reach the pus cavity. He asked Dr. Born of the Polyclinic Faculty to find the pus, and the doctor plunged in the knife boldly about one and a half inches and let out quite a quantity of pus; then the patient improved. The cavity was found to be in the superior lateral part of the orbital cavity; double sight persisted; the ptosis on the right side improved, but not on the left.

The interesting features in this case are, the length of time it will require to fill up these enormous cavities and the occurrence of the orbital abscess. One of the sinuses had a pocket which ran upward and across towards the other side. He expected the granulations to fill in from behind and then secure a good result.

Regarding the orbital abscess, that was a condition he never before had, although some authorities mention it in septic cases, especially when the diseased condition was so extensive as in the one presented.

A Case of Thyro-Glossal Cyst and Fistula.

DR. ROBERT C. MYLES presented this patient, who had been operated on repeatedly by some of the best general surgeons in the city during the past seven years. The anterior surface of the neck was practically one continuous cicatrix. The patient, when he consulted him several months since, was emaciated, and desperate concerning the frequent recurrence, pain and annoyance. There was a soft swelling near the median end of the clavicle on the right side. An incision was made into this swelling, some amber colored thick fluid escaped. A small duct was followed up along the right side of the trachea, with considerable difficulty and found to empty into a cavity under the middle part of the hyoid bone. The patient had gained forty pounds in weight, and felt well, but a small fistula beneath the hyoid resisted all efforts at curetting and packing. A few days since he requested Dr. Bodine to try radical procedure. Dr. Bodine made an incision two inches long in the middle line after he had injected a solution of methyl blue in the duct. He thoroughly dissected away all tissue that looked suspicious, and hoped for a permanent cure. The case was interesting on account of the numerous fistulae and the frequent recurrences.

DR. C. G. COAKLEY said he had seen a similar case one year ago which was not so extensive. The patient had been operated on several times during the past two or three years. The cyst was the size of a hickory-nut, and had a small fistula connected with it. A

diagnosis of probable thyroid cyst had been made and attempts at extirpation had been tried. In one week the cyst was the size of an English walnut. When opened a thick glairy slightly turbid fluid escaped. The cyst wall was examined and was said to be composed only of inflammatory tissue with an epithelial lining. The fluid examined contained no iodine compounds. The patient was operated on two or three times and finally all was cut out that could be and the parts were then painted with pure carbolic acid. The patient had remained well since the early part of January.

The doctor said he saw another case last October which was undoubtedly the same thing, the condition being very like in appearance. Every two or three months the patient's neck swelled up so that it was a straight line from the chin to the clavicle. This patient disappeared from view.

DR. EMIL MAYER said that this case reminded him of one of bronchial cyst reported in the *Boston Medical and Surgical Journal* issued about six months ago. The surgeon reported, in that article, that he had dissected out the entire tube of the cyst and reported brilliant results. The small tube that he dissected out was not larger than an ordinary thread and about $1\frac{1}{2}$ inches in length. The dissection led to the floor of the mouth. The results would be excellent if operations were performed early and with careful dissection far better results could be had after the first operation than if one operated when there were recurrences.

DR. J. A. BODINE referred to the differential diagnosis between bronchial cysts and thyro-glossal cysts. A tumor situated upon the lateral side of the neck and one that was congenital was a true bronchial cyst, as a rule, and had an opening in the anterior pillar of the fauces or just below tonsils. To find the opening it should be injected with a strong solution of methylene blue.

On the other hand a small cyst situated in the median line of the neck was, in the great majority of cases, a thyro-glossal cyst. Many were presented under the skin and of the size of a hickory-nut or walnut. If this be incised and packed with gauze no cure will result. But if it be incised and sufficient quantity of pure carbolic acid be used to cause necrosis and destroy the cyst-sac, one would then cure a certain number of cases. The true origin of such cysts was under and behind the hyoid bone. Therefore, if one attempted to remove the cyst one had better continue the dissection down to the hyoid bone, then hook it up and draw it forward and upward, and so get at the duct. Abstain from sewing up the wound; let it drain and allow it to heal from the bottom.

DR. ROBERT C. MYLES, in closing the discussion, said that works on this subject showed pictures of the duct of the cyst appearing in the center of the base of the tongue, and this duct extended to and under the hyoid bone and to the upper part of the center of the thyroid cartilage. Injection of colored fluids into this duct would show its exit on the base of the tongue.

A Case for Diagnosis.

DR. J. CLARENCE SHARP presented a patient 40 years of age who, eighteen months ago, came to the hospital when hypertrophied tonsils were found. Their removal was advised, but declined. The patient disappeared, but reappeared six months ago. The tonsils were large and he was again advised to have them removed, when he said they had been taken out six months ago. Upon examination of the mouth it was found that the mucous membrane of the soft palate and uvula was very much thickened, and tonsils so hypertrophied that they met in the median line. The uvula was so hypertrophied that it was pushed out in front of the tonsils. The mucous membrane of the soft palate looked like an old oedematous leg. Cotton on probe touching the soft palate leaves a dent, which soon fills up. The patient had general psoriasis, and when this was treated the condition in the mouth improved. The tonsils were again removed, and he believed were being reproduced. At the base of the tongue the large tonsillar tissue was not removed because of the hemorrhage which was very great. He thought this to be a case of psoriasis of the mucous membrane, but he showed the case for diagnosis. No internal treatment had been given except rhubarb and soda mixture. The man smoked as many as twenty cigarettes a day.

DR. EMIL MAYER said that in view of the fact that there was a history of psoriasis one must accept that diagnosis. But without such a history he would not be inclined to accept it. He would like to know what effect arsenic would have, administered internally, and with all local treatment suspended.

A Case for Diagnosis.

DR. FRANCIS J. QUINLAN presented a patient, a woman of advanced years, who came to his service at the New York City Hospital with a supposed epithelioma. The question arose as to whether the neoplasm was an epithelioma or a gumma. It was impossible to examine the patient carefully, because the jaws were tightly closed. The therapeutic test was given and she responded slowly, and to-day she could open her mouth and swallow. There was a large excavation to be seen there. A section was examined by one of the house staff with negative results.

A Case of Syphilis.

DR. FRANCIS J. QUINLAN presented a woman, 26 years old, in order to show the ravages of syphilis. She practically had few symptoms up to two or three months ago, and now she was in a horrible plight, with her nose nearly folded on itself. He asked for surgical advice from the members in regard to means of restoring the defects and making the patient more presentable.

DR. T. PASSMORE BERENS referred to the beautiful results in such cases that were shown in an article by Dr. Roe on corrections of deformities of the nose. The beautiful results were shown by photographs.

DR. FRANCIS J. QUINLAN said, in closing the discussion, that Dr. Roe's pictures were always beautiful.

Jackson's Transilluminating Lamp.

DR. JOSEPH H. ABRAHAM presented for Dr. Delavan one of Dr. Chavalier Jackson's transilluminating lamps. During the use of this lamp something occurred which caused a shattering of the glass and fragments of glass might have caused much irreparable injury if it had been in use in a patient's mouth at the time. He thought the current was two powerful to be safe for use.

DR. EMIL MAYER said that in view of the great number of rheostats that had been devised for controlling the street current, it was remarkable that this device as presented had no provision whatever of that sort. In fact, there seemed to be no provision whatever for instantaneous shutting off of the current nearer than the stop-cock on the wall socket, and as has been shown this becomes a very dangerous instrument. He could imagine it to have been a very exciting moment, and he felt that the Section owed a debt of gratitude to Dr. Delavan for recounting his experience.

DR. DENNIS J. McDONALD said that the lamp presented showed that it could take a voltage of 115, while the current in New York City only had a voltage of 110. There must have been a leakage at the leader-tap, and a rheostat should be placed in between it and the tap itself. The size of the lamp had nothing to do with the voltage. A lamp with 115 voltage would stand a resistance of 110 provided everything else was perfect.

DR. JOHNSON said that the difficulty is not with the lamp so much as with the faulty construction of the apparatus.

DR. C. G. COAKLEY said that if the lamp was in connection with a rheostat no such accident as reported could happen and do any damage. The lamp was also too large to give the best results by transillumination.

DR. ROBERT C. MYLES said that the use of a lamp connected directly with the Edison current was dangerous. He believed a four candle-power lamp with proper rheostat would produce better shadows.

DR. GEORGE B. McAULIFFE said that the great advantage of the Jackson lamp was its cheapness. It developed an intense heat and sometimes in sinus work the rubber begins to smoke. The heat generated precluded its general use in mouth work.

DR. ABRAHAM said that Dr. Delavan thought it was the lamp itself which was at fault. When connection was established it gave a brilliant light. In the accident which occurred the glass was shattered into many fragments and this proved that it was a dangerous lamp to use. Possibly the glass bulb was not strong enough, as there was no short-circuit at the plug attachment or handle.

An Attachment to Bennett's Inhaler for Pharyngeal (Crile's Method) and Tracheal Administration, and for the Ethyl Chloride-Ether Sequence.

DR. VICTOR C. PEDERSEN demonstrated this instrument. He quoted Dr. George W. Crile's method of pharyngeal administration of anaesthetics (*Annals of Surgery*, June, 1903) and then said that his complete attachment consisted of a tube two inches long fitted at one end with a female thread which screwed upon the ether-chamber in place of the regular metal face-mask. At the other end of the tube is a male thread upon which was screwed a removable cap bearing two tubes to which the rubber tubes for nasopharyngeal introduction of Crile's method are attached, or the cap necessary in ethyl chloride ether work. In the body of the tube is a large valve equal in area to the tube-bore, so that the anaesthetic may be instantly short-circuited. The attachment may be adjusted for either the use of ether or chloroform. For tracheal work one of the tubes of the cap is plugged with a cork and the other connected with the tracheotomy tube as in Trendelenburg's apparatus. For ethyl chloride ether exhibition the regular face-piece is screwed to the ether-chamber and the attachment is slipped over the other outlet. One tube is now adjusted to the attachment to receive the ether-bag fixture. The gauze carrier is slipped into this cap. When the valve of the attachment and of the ether-bag are wide open the ethyl chloride is sprayed upon the gauze, and the principle obeyed that most anesthetics act better when their initial administration was deliberate, uniform and combined with unobstructed air respiration. The amount of ethyl chloride and of air may be regulated exactly as desired, and when ethyl chloride anesthesia is established the valve should be closed and the ether with which the chamber had been loaded could be turned into the respiratory circuit until full narcosis was established. As to the results in practice, he said that the foregoing means of applying Crile's method had worked exceedingly well at the Roosevelt Hospital on public patients who usually are less desirable subjects of anesthesia than private patients. As a means of tracheal administration the apparatus was self-evidently perfect, comprising all the features of Trendelenburg's apparatus and adding a short-circuiting valve. As a means of employing ethyl chloride-ether sequence he had employed it for the last three months on all patients irrespective of alcoholism and other undesirable features. This device secured three aims: (1) It initiated the ethyl chloride anesthesia slowly with a regularly decreasing quantity of air; (2), it maintained the ethyl chloride anesthesia perfectly, and (3), it permitted the ether narcosis to be induced associated with the other without change of apparatus or disturbance of the patient.

DR. C. G. COAKLEY asked Dr. Pedersen what experience he had had with the Crile method regarding bronchitis as a sequel. In a case operated upon in Bellevue by the Crile method when the anesthetist was the official one, the patient developed a most severe

laryngitis and bronchitis, far greater than he had ever seen follow the usual method of administering ether.

DR. WENDELL C. PHILLIPS believed that a warning should be sounded in the use of cocaine upon patients who were about to receive an anesthetic. There were a certain number of patients on whom cocaine was a cardiac depressant and he never permitted patients to have cocaine when they were about to be anaesthetized.

DR. J. A. BODINE believed that the use of cocaine prior to the administration of a general anaesthetic, in any operation upon the larynx, was a valuable adjunct. Crile had shown that cocainization of the nerve or mucous membrane did away with the nervous reflexes. In operations around the neck, the mouth or larynx he preferred the use of chloroform. He believed the dangers of chloroform had been over-rated and he thought the dangers from chloroform were less than those from ether, if the anaesthetic be given by a competent man. The greatest danger from the use of chloroform was not from chloroform *per se*, but from fright. Fear could kill. He advocated the preliminary injection of morphine, not to lessen the irritation of the larynx, but to do away, to a certain extent, with fear by substituting a "Dutch courage."

With regard to the antidote for cocaine he believed in the efficacy of morphine a fact which was brought out by a gentleman in South Orange, N. J., in attending a case of attempted suicide. The party had taken a large dose of cocaine, and because it did not kill him quick enough he took a large dose of morphine to expedite matters, with the result that he recovered, when either of the large doses would have been sufficient to have killed him when given alone.

DR. WILLIAM K. SIMPSON said that many of the unpleasant features of cocainization would be done away with if the cocaine was mixed with adrenalin.

DR. GEORGE B. McAULIFFE said that many believed that the danger of a general anaesthetic was from the absorption from the mucous membrane of the nose; therefore, if the nose be plugged with cotton in order to compel the patient to breathe through the mouth this danger would be obviated. Cocaine by contracting the turbinates fulfilled the same purpose.

DR. VICTOR C. PEDERSEN said that he personally preferred chloroform to ether in these more difficult administrations when possible. It is well known that one gives so much less chloroform, bulk for bulk, and it is much less irritating than ether. On account of the irritating qualities of unwarmed ether-vapor, it is probably not good judgment to use Crile's tubes combined with the close method of giving the ether. Plenty of air should be allowed with the ether, and drop by drop should be the manner of giving it. He acknowledged that there were a great many patients very susceptible to the influence of cocaine. In virtue of this fact his first two or three patients did not receive cocaine, and they did not do so well as the later ones who did. The nostrils bled a great deal. He believed that cocaine given in proper cases and judiciously would be of great

advantage. He said that practically all agreed that chloroform was dangerous through the element of fear. He had had but one crisis with chloroform, and that was in an Italian child who was very fearful. Morphine in these cases he considered to be a great adjuvant, and he believed in large doses in adults, for instance, giving 10 minims of Majendie's solution, so as to carry the patient over periods of interruption of administration of the anaesthetic.

Exhibition of Anatomical Specimens of the Frontal Sinus to Illustrate Paper.

DR. BEAMAN DOUGLAS presented the following:

1. Naso-frontal duct located behind the hiatus semilunaris.
2. Frontal sinus turned backward over the orbit the entire length.
3. Two large frontal sinuses divided by septa.
4. Cross section demonstrating the relation of drainage from the frontal sinus into the antrum by way of the hiatus.
5. A large ethmoidal cell extending to the roof on a level with the frontal sinus which might be easily entered by a probe and mistaken for the frontal sinus.
6. A case with only one frontal sinus. The left sinus extended to the right side and was subdivided by bony septa.
7. Specimen taken from a case, aged 25, in which a small sinus was present on the right side and absent on the left side.
8. Specimen in which the frontal sinus floor was as low as the processus angularis.
9. A case in which the accessory ethmoidal cells developed in the processes angularis and drained near the naso-frontal duct so that the discharge from it simulated a frontal sinus discharge.
10. A case in which the naso-frontal duct was internal to the hiatus semilunaris, between it and the middle turbinate body.
11. Case of anterior ethmoidal cell developed within the floor of the frontal sinus.
12. Case in which the frontal sinus instead of draining into the hiatus, drained into the accessory ethmoidal cell developed in the processus angularis.
13. An entire ethmoid cell developed within the frontal sinus, reaching from the floor to the roof of the frontal sinus.

Question of the Intra-Nasal Frontal Sinus Operation.

DR. BEAMAN DOUGLAS read this paper, published in full in the May, 1904 issue of *THE LARYNGOSCOPE*, page 346. Discussion postponed until the May meeting because of the lateness of the hour.

Exanthematous Eruptions Following Throat Operations.

DR. LOUIS FISCHER read this paper, published in full in the May, 1904 issue of *THE LARYNGOSCOPE*, page 363.

DR. WALTER F. CHAPPELL said that he did not believe that any case operated upon by him could contract scarlet fever from him, because so great care was taken in the sterilization of the instru-

ments, and the preparation of the hands, etc., of both himself and those who assisted him. When called to see a case in consultation of scarlet fever or measles, he made it a rule never to do any operation that day. If the case was imperative he turned it over to another doctor. At the Manhattan Eye and Ear Hospital all the instruments used during an operation are sterilized prior to operation and are not used again until they have been placed again in the sterilizer. A patient might come in for operation at the hospital and contract the disease while seated on the benches. In his experience he said he had never seen a rash follow an operation upon the throat. Many children are susceptible to rashes when subjects of tonsillitis. He referred to a lady who feared leaving her home because she had so often been quarantined for scarlet fever when a rash appeared that always accompanied her attacks of tonsillitis. Before and after every one of his operations he always had the temperature taken and the urine examined. He favored the local use of alcohol before and after operations upon the throat.

DR. WOLFF FREUDENTHAL said that he did not believe the rash that appeared soon after operations on the nose and throat had anything to do with the operation itself. He did not consider these operations particularly serious and used the ordinary methods of cleansing the instruments, operating usually in the early morning after he had taken his bath.

He said that one must bear in mind the fact that scarlet fever micro-organisms might be present in the throats of children whose resisting power prevented the development of an attack of scarlet fever; yet the operation itself may stir up those germs and, by lowering the vitality of the child, give rise to an outbreak of the disease.

DR. HERMAN JARECKY said that all cases of so-called surgical scarlet fever occurred within two or three days after the operation, according to the records of our largest hospitals. The etiology was, as a rule, difficult to establish. He said that the patient referred to by Dr. Louis Fischer had been taken care of with all necessary aseptic precautions. His own office nurse had sterilized all the instruments and towels, and he had not been in contact with any patient having a contagious disease at that time. He cited one other case that had occurred in his practice, in which adenectomy had been performed, and a few days later the patient had a typical attack of measles.

DR. WILLIAM N. HUBBARD reported a case that he had operated upon; the day following this patient had an attack of chicken-pox. In another instance the patient developed an attack of German measles. These outbreaks of rashes following operations upon the nose and throat, or elsewhere in the body, he believed to be mere co-incidences.

DR. M. D. LEDERMAN said that the eruptions after operations recorded by Dr. Fischer were manifestations of an infectious dis-

ease, the symptoms coming on a day or two after operation. There are eruptions, however, following operations on the throat, with temperature of one or two degrees increase, which disappear within another twenty-four hours, which are not due to a specific infection. He referred to 26 cases of operations upon the tonsils and adenoids, and which were accompanied by an increased leucocytosis which, he believed, gave rise to the fever and skin lesions. This was not always an infectious disease, but simply an erythema. Desquamation does not occur in this class of cases.

DR. LEWIS A. COFFIN said he thought it was a case of coincidence. In fact, he thought that, considering the number of children operated on in this city for enlarged tonsils and adenoids, it was remarkable that a man having as large a practice among children as Dr. Fischer has should have even only 17 cases of scarlet fever following operation.

He said cases came for operation frequently during an exacerbation for example, the throat is sorer than usual, or breathing worse; these might be the prodromal symptoms of the scarlet fever, and yet the case be operated. He advocated the use of the thermometer, and reported having more than once postponed an operation on account of its use.

DR. BEAMAN DOUGLAS wondered why he had never seen such rashes as were referred to after operations upon the tonsils and adenoids. He believed such rashes were simply complications and had really nothing to do with the operation.

DR. FISCHER, in closing, said he was surprised not to hear more regarding erysipelas. An erysipelas rash might be mistaken for scarlet fever. The bacteriology of the throat he considered to be very important, and many pathogenic germs might be found upon careful examination. In one clinic he conducted a series of examinations upon 500 children taken hap-hazard and he found the streptococcus in 300 cases, and the Klebs-Loeffler in 7 or 8 cases. These cases would be reported as diphtheria, but they were the bacteriological form of diphtheria. He did not mean to convey the impression that if those seven or eight cases had been operated upon they would have developed diphtheria, or a streptococcal infection. It seemed that possibly something might be done in a prophylactic way, applying certain measures before operations.

Regarding chicken-pox and measles he said that he saw many such cases following operations; also toxæmic rashes, similar to what was seen after burns and belladonna poisoning, etc. He wished it to be understood though that his paper referred to true cases of scarlet fever. The period of incubation seemed to be shortened by reason of the operative work.

SELECTED ABSTRACTS.

The Formalin Treatment of Laryngeal Tuberculosis.—L. B. LOCKARD (Denver)—*Colorad. Med. Times*, Nov. 1903.

Lockard considers formalin to be more generally applicable and effective than any other remedy for laryngeal tuberculosis. Besides its pre-eminent germicidal effect, is another hardly less essential; its absorbent or shrinking power upon hyperplastic tissue.

It is also pointed out that while formalin is positively germicidal in strength of 1 to 75,000, locally in the larynx, without any inconvenience other than momentary smarting which can be controlled by the previous use of cocaine, we can use solutions as strong as one to fifty. As to its prohibitive action upon secondary invasion there can be no question. The remedy has been condemned by some who have neglected to remove vegetations and infiltrations surgically. Lockard has seen several cases where complete cicarization has followed the use of formalin upon extensive ulcerations of the epiglottis, so often considered hopeless. Another property of the remedy is its power of producing anaesthesia.

Almost every observer who has reported against it has used it inefficiently.

Lockard advises daily or at least tri-weekly office treatment with a spray of one-half per cent, and vigorous rubbings with a three to ten per cent solution, depending upon the degree of involvement and the susceptibility of the individual. In addition to these daily treatments, a spray of one-half per cent solution should be used at home three or four times a day, so arranged that the intervals are never more than three or four hours.

EATON.

Deaf-Mutism.—JOHN G. WISHARD—*Ind. Med. Journ.* Aug., 1903.

As medical officer at the Indiana Institute for the Education of the Deaf, the author gives a summary of 317 cases of deaf mutism examined by him during the past two years:

183 pupils examined were boys and 134 were girls. The average age a little more than twelve years. The causes given by parents and family physicians were as follows: Born deaf, 119; brain fever, 36; cerebro-spinal meningitis, 34; catarrh, 20; otitis media, 16; scarlet fever, 15; traumatism, 11; influenza, 9; measles, 6; typhoid, 7; malaria, 11; scrofula, 4; whooping cough, 3; mumps, 3; diphtheria, 2; pneumonia, 2; quinine, 2; earache, 1; inanition, 1; eczema, 1; unknown, 9; paralysis, 1; spasms, 1; tonsilitis, 1.

Heredity, he holds, is the first and greatest cause for congenital deafness, including as it does, the marriage and inter-marriage of the deaf. Consanguinity of parents, eliminating deafness among the relatives, is not a direct cause. Climate and manner of living are potent factors. Eliminating heredity and manner of life, one race is not more subject to it than another.

STEIN.

The Fenestra Rotundum is the Only Passage for the Transmission of Sounds in the Air to the Labyrinth—C. SECCHI.

—*Arch. Ital. di Otol.; Rhin.; Laryngol.* 1902, Vol. xii, fasc. 4.

The author, after numerous clinical observations and physiological experiments, concludes that the physical necessity of the chain of ossicles cannot be denied, and is constrained to admit that it is the only medium by which sounds are transported to the labyrinth and the air contained in the tympanic cavity. This latter transmits, according to the law of Pascal, its vibrations to the fenestra rotunda and as soon as they reach the inner walls are changed on contact with the labyrinthine liquid, in which are noted the terminal fibres of the acoustic nerve, which, proportionally to the opening in that labyrinthine capsule, but instantly through the incompressibility of the medium, receive shocks which are proportional and in constant relation to external shocks, because they are changed by the size of the two openings, the external tympanic and the internal cochlear.

The tympanic cells, distributed throughout the cavity of the tympanum, has for its office, the phenomena of resonance; the chain, governed by its muscles, acts so as to stretch or relax the membrane, to regulate the endotympanic pressure, in the manner most efficacious and adapted to the audition of conscious attention, to awaken the attention that is not conscious to prepare and to defend against unexpected sounds of great scope or large deafening noises.

The antrum and cell, on the other hand, act as protectors from the air, shaken by a sudden or dangerous movement, and are designed to increase the surface of attachment of the muscles.

Thus the fenestra of the cochlea is the door of entrance of a sound wave to the labyrinth, to open it when its closure cannot be useful.

G. FERRERI.

A Clinical Study of the Use of Antitoxin Serum (Dunbar's) in Hay Fever, Etc.—ALEX. W. MACCOY (Phila.)—*N. Y. Med. Journ.*, Nov. 21, 1903.

The author's observations are based on his treatment of 15 cases of periodic attacks of autumnal hay fever with the Dunbar Serum. He found the effects promptly shown and the relief was decided. Results were so permanent for the reason that the treatment appeared astoundingly active. He believes that no such advance has as yet been made in the treatment of this troublesome affection.

Local application of the serum to the eyes and nasal mucous membrane was carried out; one or two drops were instilled into the eyes from two to four times a day. For the nose, from two to four drops were dropped in each nostril from two to six times daily. Six cases are reported in abstract.

(The abstractor had the good fortune to be favored with the powdered hay fever antitoxin, through the kindness of Prof. Dunbar's associate in Hamburg, and during the past summer employed the dried serum in a few cases of late hay fever, with distinct amelioration of the unpleasant symptoms. The powder was blown into each nasal passage, after the patient had removed the accumulated mucus

by blowing the nose. Very little irritation followed the application in this manner and though the clinical experience was not a prolonged one, nevertheless the serum certainly afforded considerable relief to the patients treated. These applications can be made two or three times daily. Preferably early in the morning and late in the evening.)

M. D. L.

Sarcoma of the Nose.—J. G. CONNAL—*Glasgow Med. Journ.*, Nov. 1903.

The writer records the case of a man, 56 years of age, from whose nose he had successfully removed a sarcoma by means of the electro-cautery. He comments upon the unreliability of such symptoms as epistaxis, headaches and nasal obstruction and lays stress on the suspicious character of a wide spread infiltration in making a diagnosis.

A. LOGAN TURNER.

A Sarcoma of the Naso-Pharynx.—W. K. SIMPSON—*The Med. Brief*, Nov., 1903.

Many interesting points are brought out in the report of this case. The patient, twenty-seven years old, was a subject of attacks of acute coryza and otitis media. Examination of the naso-pharynx revealed the space almost completely filled with a mass giving the appearance of an ordinary adenoid growth, which bled easily upon manipulation. Seven months following the patient complained of frequent and excessive nasal hemorrhages. Most of the blood came through the anterior nares. The mass, in the naso-pharynx, seen at the first examination, was larger now, paler, and the inferior border was eroded. Two months later the mass was removed with a large Gottstein curette under cocaine and adrenalin solutions. Scarcely any hemorrhage followed the operation. The gross appearance of the mass removed resembled an ordinary adenoid, but microscopical examination reported it to be sarcomatous.

STEIN.

Adenoids: Their Symptoms, Relations They Sustain to Acquired Deaf-Mutism, and Treatment.—B. L. W. FLOYD—*The Cin. Lan. Clin.*, July, 1903.

In considering the direful effects of adenoids in the child, the author expresses himself as believing this condition to be the most frequent cause there is of acquired deaf-mutism. He thinks that a special board of otologists should examine all deaf mutes, and where they are acquired, the condition producing the deaf mutism should be removed. Nothing is said as to the differentiation between the congenital and acquired form of deaf mutism.

Mention is made that adenoids cause an abnormal development of the superior bone, giving us the high arch palate and the overhanging of the front upper teeth over the lower set.

The laryngitis caused from adenoids may explain why so frequently we have papilloma of the larynx at this time of life.

STEIN.

Hay Fever—A Cause and a Cure.—FRANK E. STOWELL (Worcester, Mass.)—*N. Y. Med. Journ.*, Sept. 5, 1903.

The author speaks from personal observation, and from a trial of the use of smoked glasses on one or two other individuals. In his own case the wearing of smoked glasses gave instant relief, after he had suffered several days.

The patient should feel a sensation of relaxation come over his face as soon as he looks through the glasses. A No. 3 was sufficiently dark for the author.

The cause of his attacks was the light of the sun's rays.

M. D. L.

Zur Kenntniss der Nebenwirkung einiger Arzneimittel auf das Ohr—DR. SWABACH—*Deutsche med. Wchnschr.*, Leipzig, March 10, 1904.

Schwabach reports a case of tinnitus aurium and deafness associated with conjunctivitis due to arsenic poisoning, and a case of tinnitus due to the use of salipyrin. In the latter case the tinnitus was stopped by the use of the fluid extract of ergot in ten minim. doses three times a day. The author suggests that the use of ergot in connection with quinine, salicilic acid, etc., might prevent the tinnitus caused by these drugs.

YANKAUER.

The Significance of Pain in the Ear.—J. G. CONNAL—*Glasgow Med. Journ.*, March, 1903.

The author first passes under review the causes of earache which are situated in the ear itself, such as otitis media and its complications, furunculosis, Keratosis obturans and malignant disease. He then refers to the causes of reflex pain such as dental caries, tonsillar abscess and ulceration, pharyngeal ulceration and affections of the base of the tongue, epiglottis and larynx.

A. LOGAN TURNER.

Some Observations on Stacke's Operation.—THOMAS R. POOLEY (N. Y.)—*N. Y. Med. Journ.*, July 11, 1903.

The drift of this paper is toward the conservative side. The author justly emphasizes the dangers of the radical operation, and remarks that heroic local attention frequently produces good results. Rapid extension of a chronic otitic disease of a suppurative nature, or mastoid, or in the parietal or occipital region increased by perforation operation. Persistent and recurrent pain in the ear or mastoid, or in the parietal or occipital region increased by percussion, frequently points toward temporal or cerebellar complications.

Vertigo, permanent or intermittent, may be due to erosion of the external semi-circular canals, while headaches, heaviness, pressure, stupor and loss of consciousness are associated with brain lesions, and augment the necessity of radical treatment.

M. D. L.

The Prognosis of Chronic Otorrhea.—H. O. REICK.—*Maryland Med. Journ.*, April, 1903.

In reviewing the possibilities of the different forms of treatment of chronic otorrhœa, the author states in his opinion that only from two to five per cent of cases need be counted as at present incurable. In view then of the admittedly grave danger to the health and life of any person the subject of chronic otorrhœa and of the almost certain curability of every cause submitted to proper and persistent treatment, let us no longer be guilty of neglecting these cases. E. D. L.

Shall we Operate on Deformed Septa in Cases of Atrophic Rhinitis?—BALDWIN, KATE W. (Phil.)—*Jour. Amer. Med. Assoc.*, Jan. 9, 1904.

After an interesting resume of the methods of treating this condition in the past, the author concludes that she has yet to see a case operated that has not markedly improved. After a few careful cleansings she attacks the affected sinuses and corrects the septal deviations, removing as little tissue as is necessary to correct the abnormality and rid the cavity of all tissue, the recuperative power of which is lost. The earlier in the disease this treatment is given, the more flattering the results.

No better review of this article can be given than the author's conclusions:

1. Surgical measures are often demanded at an altitude in cases which had previously gotten along comfortably without it at sea level.
2. The results of such procedure are at least as satisfactory as elsewhere, but more than usual care must be taken to save all secreting tissue.
3. The local symptoms of atrophic rhinitis are aggravated, though the constitutional conditions are often markedly improved.
4. The moist form of hypertrophic rhinitis is much improved.

In disease of the accessory sinuses, if the appropriate relief is given, the affected surfaces dry up and heal more rapidly and surely than at sea level. In this respect the result is the same as is well known to be the case in the healing of other wounds and ulcerations.

With regard to surgical cases treated at an altitude, nasal or otherwise, it is undoubtedly true that they do better and require less post-operative care than at a low level.

There appears also to be an absence of the danger of infection to the wounds inflicted on tuberculous cases, which is usually so much dreaded elsewhere.

Thus far our discussion has been limited to the influence of altitude on the nose. We will now briefly consider its effects on the throat. In the first place it may be said that in most instances what affects the nose also affects the throat. This applies to disorders whether of local or systemic origin. The limits of this paper do not permit a full discussion of the influence of the climate on tubercular laryngitis, but it may be here stated that the experience of the writer and most of his colleagues is that it is decidedly favorable. Of course, it is recognized that tubercular laryngitis is for the most part an expres-

sion of a tendency of the tuberculosis to spread, and that the great majority of the cases die from their pulmonary tuberculosis, yet the narrow margin of recoveries is less narrow when the cases are treated in a high altitude, and that local treatment is much more successful than at sea level.

The tonic and stimulating effects of the climate, both direct and indirect, are as markedly beneficial to local and general anemia as they are irritating to plethoric and hyperemic conditions.

6. The manipulation is harmless, painless, and easy of application, without any of the ill-effects of drugs; it offers a maximum good effect with a minimum derangement.

8. The patients treated in this manner are less likely to suffer from complications and sequelæ than those treated only medicinally; they emerge from the disease in far better condition, less exhausted, and less emaciated, because vomiting has been controlled.

9. It is advisable to try the maneuver in other spasmodic coughs and laryngeal spasms (laryngismus stridulus, pressure of enlarged cervical and bronchial glands, influenza, glottis spasm in catarrhal laryngitis), although my experience has seemed to show that it is far less efficacious in these conditions than in whooping-cough.

10. This method, being directed mainly to the control of the glottis spasm, does not preclude the advisability of supporting and sustaining the patient, guarding his gastro-intestinal tract, establishing equilibrium in the nerve-centers, and affording him every possible hygienic advantage.

11. It is particularly indicated in instances complicated with diffuse tival or subcutaneous hemorrhage, or sublingual ulceration, and in those children who by virtue of age, the presence of rachitis, scrofula, or general debility are predisposed to serious complications and sequelæ.

F. C. E.

A Case of Black, Hairy Tongue.—R. H. JOHNSTON (BALTIMORE)

—*N. Y. Med. Journ.*, July 18, 1903.

The interesting feature of the case reported is that the tongue showed a marked growth of black hairs, which could be pulled out with forceps.

The patient was 56 years old, who stated that he had always enjoyed good health, and only complained of a peculiar sticking sensation in the mouth and a blackness of the tongue. This patch of discoloration increased about 10 m.m. in both diameters and was situated in front of the circumvallate papillæ in the center of the tongue. The hairs covering this area were half an inch in length. Under the microscope the hairs were found to consist of bonified epithelium, one cell upon another. The patient did not return for further observation. This is the eighth case recorded in this country. Most observers believe that the hairy formation is due to the prolongation and thickening of the epithelium of the filiform papillæ. Most of the cases have been seen in old people, or those enfeebled by illness. The cause of the disease is uncertain. The best result follows the scraping the mucus membrane and applying strong antiseptics. Attention should be directed toward the gastro-intestinal tract.

M. D. L.

On the Development of the Faculty of Speech.—G. HUDSON MA-KUEN.—*Internat. Med. Magazine*, July, 1903.

Thought depends for its development upon some form of expression, and the mind must have a tool with which to work, and for the efficient working of the mind the tool must be in good condition.

The slightest defect of speech, therefore, may retard mental development. Speech is an acquired faculty. It is largely the result of unconscious imitation, the best speakers being those who make use of it merely as a tool of the mind, without giving to it, at the time of speaking, any special thought. To think of the manner of speaking is disastrous, just as it is disastrous to think of the manner of walking.

One of the principle causes of the development of defective speech is ill health, such as the infectious diseases of childhood. These diseases seem to have a special predilection for the nerve centers of speech. Severe nervous shock following a sudden fright, or an injury to the head is often an exciting cause in children predisposed by unstable mental and physical constitutions.

Owing to the question of unconscious imitation it becomes difficult to separate heredity from environmental influences as a cause.

In order to have good speech a child must be both well born and well bred. He must inherit the tendency to the development of good speech, and he must hear only good examples for imitation.

STEIN.

Foreign Bodies in the Larynx and Trachea.—GEORGE L. RICH-ARDS.—*Internat. Med. Magazine*,—July, 1903.

The author after detailing the symptoms and treatment of such cases, speaks of the difficulties in diagnosis between foreign bodies within the larynx and trachea, and the esophagus; inasmuch as the trachea and esophagus lie side by side.

To illustrate, he recites the case of a child of five years who had a small open safety-pin in the mouth. In some way she drew it into the throat but whether or not it had been swallowed was not known. Examination revealed nothing at first. Five days later under the X-rays examination its presence was made out to be in the larynx. Uncertainty seemed to exist as to whether it lay in the larynx or the esophagus. Accordingly the patient was placed under an anæsthetic and a careful examination with a mirror was made, but nothing was seen. A sound was then passed into the esophagus but nothing was felt. The same negative results were obtained in passing the sound down between the vocal cords.

A few days later further X-ray photographs were taken, and the pin was finally discovered lying in the right bronchus.

Thirty-four days after the accident, a low tracheotomy was performed and with the aid of long forceps the pin was located and removed.

STEIN.

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JUBILEE PREPARATIONS.

March 17th, 1904, commemorated the 99th birthday anniversary of MANUEL GARCIA. The laryngologists of the whole world unite in the sincere wish that this great man will live to celebrate the 100th anniversary of his birth, retaining his present wonderful mental and physical vitality.

The London Laryngological Society, wishing to do honor to its oldest honorary member, Manuel Garcia, has appointed a committee consisting of the president incumbent and former presidents, to devise ways and means of properly celebrating this event on the 17th of March, 1905. This committee at its first meeting formulated the following plans:

First. To present to Prof. Garcia a jubilee address.

Second. To unite with other Laryngological and Musical Societies to raise a fund to provide for a permanent memorial of this day, and to further celebrate the anniversary by a banquet at which it is hoped Manuel Garcia may be present.

It has been suggested by the wife, that the most desired expression which this memorial might take, would be a portrait; and we believe this idea will meet with general approval. A portrait of the originator of the laryngoscope as he is in his one hundredth year, would be of interest historically, and furthermore that a copy of this portrait would grace the meeting rooms of all Laryngological Societies as well as the consultation rooms of laryngologists of all nations.

The committee of the London Laryngological Society hopes to place itself in communication with other societies, of whom many will no doubt wish to contribute to this fund. It is expedient that this fund be completed as soon as possible, in order to fully complete arrangements for the painting of the portrait.
